GenCore version 4.5


OM protein - protein search, using sw model

Run on: December 11, 2000, 10:40:03 ; Search time 15.22 Seconds
(without alignments)
662.955 Million cell updates/sec

Title: US-09-270-910-37-COPY
Perfect score: 818
Sequence: 1 GVFNYETETTSVIPAARLFK.....GETLLRAVESYLLAHSDAYN 159

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 182106 seqs, 63460219 residues

Total number of hits satisfying chosen parameters: 182106

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : PIR_65:*
1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

| Result No. | Score | % Query Match | Length | DB | ID | Description |
|---|---|---|---|---|---|---|
| 1 | 810 | 99.0 | 160 | 2 | S05376 | major pollen aller |
| 2 | 790 | 96.6 | 160 | 2 | G55699 | major pollen aller |
| 3 | 785 | 96.0 | 160 | 2 | D55699 | major pollen aller |
| 4 | 784 | 95.8 | 160 | 2 | E55699 | major pollen aller |
| 5 | 782 | 95.6 | 160 | 2 | C55699 | major pollen aller |
| 6 | 781 | 95.5 | 160 | 2 | F55699 | major pollen aller |
| 7 | 775 | 94.7 | 160 | 2 | I55699 | major pollen aller |
| 8 | 735 | 89.9 | 160 | 2 | A57427 | major pollen aller |
| 9 | 729 | 89.1 | 160 | 2 | A55699 | major pollen aller |
| 10 | 725 | 88.6 | 160 | 2 | H55699 | major pollen aller |
| 11 | 717 | 87.7 | 160 | 2 | B55699 | major pollen aller |
| 12 | 702 | 85.8 | 160 | 2 | S47250 | gene 1-Sc1 protein |
| 13 | 698 | 85.3 | 159 | 2 | S47251 | gene 1 Sc2 protein |
| 14 | 616 | 75.3 | 160 | 2 | S30054 | major allergen Cor |
| 15 | 616 | 75.3 | 160 | 2 | S30055 | major allergen Cor |
| 16 | 610 | 74.6 | 160 | 2 | S30053 | major allergen Cor |
| 17 | 607 | 74.2 | 160 | 2 | S47249 | gene 1-Sc3 protein |
| 18 | 603 | 73.7 | 160 | 2 | S30056 | major allergen Cor |
| 19 | 540 | 66.0 | 160 | 2 | T17005 | major allergen Mal |
| 20 | 529 | 64.7 | 160 | 2 | T17006 | major allergen Mal |
| 21 | 525 | 64.2 | 160 | 2 | T17007 | major allergen Mal |
| 22 | 500.5 | 61.2 | 159 | 2 | T17004 | major allergen Mal |
| 23 | 460.5 | 56.3 | 159 | 2 | JC4276 | major allergen Mal |
| 24 | 442.5 | 54.1 | 153 | 2 | S51119 | MalD1 protein - ap |
| 25 | 415.5 | 50.8 | 157 | 2 | T09659 | pathogenesis-relat |
| 26 | 410.5 | 50.2 | 157 | 2 | T09526 | stress response ge |
| 27 | 381 | 46.6 | 158 | 2 | T06527 | pathogenesis-relat |
| 28 | 377 | 46.1 | 158 | 2 | S42650 | pathogenesis-relat |
| 29 | 376 | 46.0 | 158 | 2 | S20518 | hypothetical prote |
| 30 | 369.5 | 45.2 | 159 | 2 | T06768 | disease resistance |
| 31 | 366 | 44.7 | 158 | 2 | S47140 | pathogenesis-relat |
| 32 | 365 | 44.6 | 156 | 1 | SNFB1 | pathogenesis-relat |
| 33 | 362 | 44.3 | 155 | 2 | S52664 | pathogenesis-relat |
| 34 | 362 | 44.3 | 158 | 2 | S20517 | hypothetical prote |
| 35 | 357.5 | 43.7 | 155 | 1 | SNFB2 | pathogenesis-relat |
| 36 | 357.5 | 43.7 | 155 | 2 | T11670 | pathogenesis relat |
| 37 | 337.5 | 41.3 | 155 | 2 | S35162 | STH-21 protein - p |
| 38 | 337.5 | 41.3 | 155 | 2 | S35161 | STH-2 protein - po |
| 39 | 334.5 | 40.9 | 158 | 2 | S12568 | pathogenesis-relat |
| 40 | 327.5 | 40.0 | 157 | 2 | S42649 | pathogenesis-relat |
| 41 | 312 | 38.1 | 178 | 2 | T07403 | TSI-1 protein - to |
| 42 | 311 | 38.0 | 155 | 2 | S04552 | pathogenesis-relat |
| 43 | 309.5 | 37.8 | 154 | 2 | S63984 | major allergen Api |
| 44 | 307 | 37.5 | 155 | 2 | S04553 | pathogenesis-relat |
| 45 | 297 | 36.3 | 155 | 2 | T14918 | pathogenesis-relat |

ALIGNMENTS

RESULT 1
S05376
major pollen allergen Bet v 1 - European white birch
C;Species: Betula pendula (European white birch)
C;Date: 31-Mar-1990 #sequence_revision 31-Mar-1990 #text_change 04-Feb-2000
C;Accession: S05376; JC4834; B53288
R;Breiteneder, H.; Pettenburger, K.; Bito, A.; Valenta, R.; Kraft, D.; Rumpold, H.; S
EMBO J. 8, 1935-1938, 1989
A;Title: The gene coding for the major birch pollen allergen BetvI, is highly homolo
A;Reference number: S05376; MUID:90005395
A;Accession: S05376
A;Molecule type: mRNA
A;Residues: 1-160 <BRE>
A;Cross-references: EMBL:X15877; NID:g17937; PIDN:CAA33887.1; PID:g17938
R;Kungl, A.J.; Susani, M.; Lindemann, A.; Machius, M.; Visser, A.J.W.G.; Scheiner, O
Biochem. Biophys. Res. Commun. 223, 187-192, 1996
A;Title: Evidence for an alpha helical T cell epitope in the C-terminus of the mai
A;Reference number: JC4834; MUID:96254050
A;Accession: JC4834
A;Status: nucleic acid sequence not shown
A;Molecule type: mRNA
A;Residues: 1-160 <KUN>
R;Ipsen, H.; Hansen, O.C.
Mol. Immunol. 28, 1279-1288, 1991
A;Title: The NH2-terminal amino acid sequence of the immunochemically partial iden
s) Car b I and oak (Quercus alba) Que a I pollens.
A;Reference number: A53288; MUID:92072607
A;Accession: B53288
A;Status: preliminary
A;Molecule type: protein
A;Residues: 2-39,'XX',42-44 <IPS>
A;Cross-references: PID:g239734; PIDN:AAB20452.1
A;Experimental source: pollen
A;Note: sequence extracted from NCBI backbone (NCBIP:68408)
A;Note: the source is designated as Betula verrucosa
C;Comment: This protein induces IgE synthesis by B cells in a T cell dependent manner
C;Superfamily: pathogenesis-related protein
C;Keywords: pollen
F;2-160/Product: major pollen allergen Bet v 1 #status experimental <MAT>

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Best Local Similarity 98.7%; Pred. No. 1.7e-64;
Matches 157; Conservative 0; Mismatches 2; Indels 0; Gaps 0;

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Db       2 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 61

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
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          |||||||||||||||||||||||||||||||||||||||
Db    122 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 160
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RESULT 2
G55699
major pollen allergen Bet v 1j - European white birch
C;Species: Betula pendula (European white birch)
C;Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 20-Aug-1999
C;Accession: G55699; S41902
R;Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheiner, ch, M.
J. Biol. Chem. 270, 2607-2613, 1995
A;Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chroma
A;Reference number: A55699; MUID:95155322
A;Accession: G55699
A;Molecule type: mRNA
A;Residues: 1-160 <SWO>
A;Cross-references: EMBL:X77271; NID:g452739; PIDN:CAA54487.1; PID:g452740
A;Note: the source is designated as Betula verrucosa
C;Superfamily: pathogenesis-related protein
C;Keywords: pollen
F;2-160/Product: major pollen allergen Bet v 1j #status experimental <MAT>

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Best Local Similarity 95.0%; Pred. No. 1e-62;
Matches 151; Conservative 5; Mismatches 3; Indels 0; Gaps 0;

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RESULT 3
D55699
major pollen allergen Bet v 1e - European white birch
C;Species: Betula pendula (European white birch)
C;Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 20-Aug-1999
C;Accession: D55699; S41899
R;Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheiner, ch, M.
J. Biol. Chem. 270, 2607-2613, 1995
A;Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chroma
A;Reference number: A55699; MUID:95155322
A;Accession: D55699
A;Molecule type: mRNA
A;Residues: 1-160 <SWO>
A;Cross-references: EMBL:X77267; NID:g452733; PIDN:CAA54483.1; PID:g452734
A;Note: the source is designated as Betula verrucosa
C;Superfamily: pathogenesis-related protein
C;Keywords: pollen
F;2-160/Product: major pollen allergen Bet v 1e #status experimental <MAT>

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Best Local Similarity 94.3%; Pred. No. 2.8e-62;
Matches 150; Conservative 6; Mismatches 3; Indels 0; Gaps 0;

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Db      2 GVFNYETEATSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 61

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
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Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
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RESULT 4
E55699
major pollen allergen Bet v 1f/i - European white birch
C;Species: Betula pendula (European white birch)
C;Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 20-Aug-1999
C;Accession: E55699; S41905; S41900
R;Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheine ch, M.
J. Biol. Chem. 270, 2607-2613, 1995
A;Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chr
A;Reference number: A55699; MUID:95155322
A;Accession: E55699
A;Molecule type: mRNA
A;Residues: 1-160 <SWO>
A;Cross-references: EMBL:X77268; NID:g452735; PIDN:CAA54484.1; PID:g452736
A;Note: the source is designated as Betula verrucosa
R;Swoboda, I.; Jilek, A.; Ferreira, F.; Vicente, O.; Hoffman-Sommergruber, K.; Heberl submitted to the EMBL Data Library, January 1994
A;Reference number: S41896
A;Accession: S41905
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-160 <SW2>
A;Cross-references: EMBL:X77274; NID:g452745; PIDN:CAA54490.1; PID:g452746
A;Note: the source is designated as Betula verrucosa
C;Superfamily: pathogenesis-related protein
C;Keywords: pollen
F;2-160/Product: major pollen allergen Bet v 1f/i #status experimental <MAT>

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Best Local Similarity 94.3%; Pred. No. 3.4e-62;
Matches 150; Conservative 5; Mismatches 4; Indels 0; Gaps 0;

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Db      2 GVFNYEIEATSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 61

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
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Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
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Db    122 HTKGDHEVKAEQIKASKEMGETLLRAVESYLLAHSDAYN 160
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RESULT 5
C55699
major pollen allergen Bet v 1d/h - European white birch
C;Species: Betula pendula (European white birch)
C;Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 20-Aug-1999
C;Accession: C55699; S41901; S41898
R;Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheine ch, M.
J. Biol. Chem. 270, 2607-2613, 1995
A;Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chr
A;Reference number: A55699; MUID:95155322
A;Accession: C55699
A;Molecule type: mRNA
A;Residues: 1-160 <SWO>
A;Cross-references: EMBL:X77266; NID:g452731; PIDN:CAA54482.1; PID:g452732
A;Note: the source is designated as Betula verrucosa
R;Swoboda, I.; Jilek, A.; Ferreira, F.; Vicente, O.; Hoffmann-Sommergruber, K.; Heberl

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submitted to the EMBL Data Library, January 1994
A;Reference number: S41896
A;Accession: S41901
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-160 <SW2>
A;Cross-references: EMBL:X77270; NID:g452737; PIDN:CAA54486.1; PID:g452738
A;Note: the source is designated as Betula verrucosa
C;Superfamily: pathogenesis-related protein
C;Keywords: pollen
F;2-160/Product: major pollen allergen Bet v 1d/h #status experimental <MAT>
F;83/Binding site: carbohydrate (Asn) (covalent) #status absent


  Query Match           95.6%;  Score 782;  DB 2;  Length 160;
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Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
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Db    122 HTKGNHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 160


RESULT   6
F55699
major pollen allergen Bet v 1g - European white birch
C;Species: Betula pendula (European white birch)
C;Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 20-Aug-1999
C;Accession: F55699; S41896
R;Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheiner,
ch, M.
J. Biol. Chem. 270, 2607-2613, 1995
A;Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chroma
A;Reference number: A55699; MUID:95155322
A;Accession: F55699
A;Molecule type: mRNA
A;Residues: 1-160 <SWO>
A;Cross-references: EMBL:X77269; NID:g452727; PIDN:CAA54485.1; PID:g452728
A;Note: the source is designated as Betula verrucosa
C;Superfamily: pathogenesis-related protein
C;Keywords: pollen
F;2-160/Product: major pollen allergen Bet v 1g #status experimental <MAT>
F;83/Binding site: carbohydrate (Asn) (covalent) #status absent


  Query Match           95.5%;  Score 781;  DB 2;  Length 160;
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Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
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Db     62 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPVGDTLEKISNEIKIVATPDGGCVLKISNKY 121

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
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RESULT   7
I55699
major pollen allergen Bet v 1l - European white birch
C;Species: Betula pendula (European white birch)
C;Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 20-Aug-1999
C;Accession: I55699; S41904
R;Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheine
ch, M.
J. Biol. Chem. 270, 2607-2613, 1995
A;Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid ch
A;Reference number: A55699; MUID:95155322
A;Accession: I55699
A;Molecule type: mRNA
A;Residues: 1-160 <SWO>
A;Cross-references: EMBL:X77273; NID:g452743; PIDN:CAA54489.1; PID:g452744
A;Note: the source is designated as Betula verrucosa
C;Superfamily: pathogenesis-related protein
C;Keywords: pollen
F;2-160/Product: major pollen allergen Bet v 1l #status experimental <MAT>
F;83/Binding site: carbohydrate (Asn) (covalent) #status absent


  Query Match           94.7%;  Score 775;  DB 2;  Length 160;
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  Matches  148;  Conservative    5;  Mismatches    6;  Indels    0;  Gaps    0;

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Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
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RESULT   8
A57427
major pollen allergen Bet v 1m/n - European white birch
C;Species: Betula pendula (European white birch)
C;Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 20-Aug-1999
C;Accession: A57427; S49450
R;Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheine
ch, M.
J. Biol. Chem. 270, 2607-2613, 1995
A;Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chr
A;Reference number: A55699; MUID:95155322
A;Accession: A57427
A;Molecule type: mRNA
A;Residues: 1-160 <SWO>
A;Cross-references: GB:X81972; NID:g807868; PIDN:CAA57497.1; PID:g551640
R;Engel, E.; Kraft, D.; Scheiner, O.; Breitenbach, M.; Ferreira, F.
submitted to the EMBL Data Library, October 1994
A;Description: Isoforms of BETV1, the major birch pollen allergen, analyzed by liquid
A;Reference number: S49450
A;Accession: S49450
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-160 <ENG>
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A;Note: the source is designated as Betula verrucosa
C;Superfamily: pathogenesis-related protein
C;Keywords: pollen
F;2-160/Product: major pollen allergen Bet v 1m/n #status experimental <MAT>


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Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           |||||||:||| :|| || || ||||||||||||||||
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RESULT   9
A55699
major pollen allergen Bet v 1b - European white birch
C;Species: Betula pendula (European white birch)
C;Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 20-Aug-1999
C;Accession: A55699; S41401
R;Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheiner,
ch, M.
J. Biol. Chem. 270, 2607-2613, 1995
A;Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chroma
A;Reference number: A55699; MUID:95155322
A;Accession: A55699
A;Molecule type: mRNA
A;Residues: 1-160 <SWO>
A;Cross-references: EMBL:X77200; NID:g450884; PIDN:CAA54421.1; PID:g450885
A;Note: the source is designated as Betula verrucosa
C;Superfamily: pathogenesis-related protein
C;Keywords: pollen
F;2-160/Product: major pollen allergen Bet v 1b #status experimental <MAT>


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Db      2 GVFNYETETTSVIPAARLFKAFILEGDTLIPKVAPQAISSVENIEGNGGPGTIKKITFPE 61

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
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Db     62 GSPFKYVKERVDEVDHANFKYSYSMIEGGALGDTLEKICNEIKIVATPDGGSILKISNKY 121

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
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Db    122 HTKGDHEMKAEHMKAIKEKGEALLRAVESYLLAHSDAYN 160


RESULT  10
H55699
major pollen allergen Bet v 1k - European white birch
C;Species: Betula pendula (European white birch)
C;Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 20-Aug-1999
C;Accession: H55699; S41903
R;Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheiner,
ch, M.
J. Biol. Chem. 270, 2607-2613, 1995
A;Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chroma
A;Reference number: A55699; MUID:95155322
A;Accession: H55699
A;Molecule type: mRNA
A;Residues: 1-160 <SWO>
A;Cross-references: EMBL:X77272; NID:g458478; PIDN:CAA54488.1; PID:g452742
A;Note: the source is designated as Betula verrucosa
C;Superfamily: pathogenesis-related protein
C;Keywords: pollen
F;2-160/Product: major pollen allergen Bet v 1k #status experimental <MAT>


  Query Match             88.6%;  Score 725;  DB 2;  Length 160;
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Db     62 GSPFKYVKERVDEVDHANFKYSYSMIEGGALGDTLEKICNEIKIVATPDGGSILKISNKY 121

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
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RESULT  11
B55699
major pollen allergen Bet v 1c - European white birch
C;Species: Betula pendula (European white birch)
C;Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 20-Aug-1999
C;Accession: B55699; S41897
R;Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheiner
ch, M.
J. Biol. Chem. 270, 2607-2613, 1995
A;Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chr
A;Reference number: A55699; MUID:95155322
A;Accession: B55699
A;Molecule type: mRNA
A;Residues: 1-160 <SWO>
A;Cross-references: EMBL:X77265; NID:g452729; PIDN:CAA54481.1; PID:g452730
A;Note: the source is designated as Betula verrucosa
C;Superfamily: pathogenesis-related protein
C;Keywords: pollen
F;2-160/Product: major pollen allergen Bet v 1c #status experimental <MAT>


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RESULT  12
S47250
gene 1-Sc1 protein - European white birch
C;Species: Betula pendula (European white birch)
C;Date: 06-Jan-1995 #sequence_revision 06-Jan-1995 #text_change 20-Aug-1999
C;Accession: S47250
R;Swoboda, I.; Scheiner, O.; Heberle-Bors, E.; Vicente, O.
submitted to the EMBL Data Library, August 1994
A;Reference number: S47249
A;Accession: S47250
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-160 <SWO>
A;Cross-references: EMBL:X77599; NID:g534909; PIDN:CAA54694.1; PID:g534910
A;Note: the source is designated as Betula verrucosa
C;Superfamily: pathogenesis-related protein


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RESULT  13
S47251
gene 1 Sc2 protein - European white birch
C;Species: Betula pendula (European white birch)
C;Date: 06-Jan-1995 #sequence_revision 06-Jan-1995 #text_change 20-Aug-1999
C;Accession: S47251
R;Swoboda, I.; Scheiner, O.; Heberle-Bors, E.; Vicente, O.
submitted to the EMBL Data Library, August 1994
A;Reference number: S47249
A;Accession: S47251
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-159 <SWO>
A;Cross-references: EMBL:X77600; NID:g534899; PIDN:CAA54695.1; PID:g534900
A;Note: the source is designated as Betula verrucosa
C;Superfamily: pathogenesis-related protein


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RESULT  14
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C;Species: Corylus avellana (European hazel)
C;Date: 07-Apr-1994 #sequence_revision 07-Apr-1994 #text_change 20-Aug-1999
C;Accession: S30054
R;Breiteneder, H.; Ferreira, F.; Hoffmann-Sommergruber, K.; Ebner, C.; Breitenbach, M.;
Eur. J. Biochem. 212, 355-362, 1993
A;Title: Four recombinant isoforms of Cor a I, the major allergen of hazel pollen, show
A;Reference number: S30053; MUID:93185652
A;Accession: S30054
A;Molecule type: mRNA
A;Residues: 1-160 <BRE>
A;Cross-references: EMBL:X71000; NID:g22689; PIDN:CAA50328.1; PID:g22690
C;Genetics:
A;Gene: Cor a I/6
C;Superfamily: pathogenesis-related protein
C;Keywords: pollen


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RESULT  15
S30055
major allergen Cor a I/11 - European hazel
C;Species: Corylus avellana (European hazel)
C;Date: 07-Apr-1994 #sequence_revision 07-Apr-1994 #text_change 20-Aug-1999
C;Accession: S30055; S35507
R;Breiteneder, H.; Ferreira, F.; Hoffmann-Sommergruber, K.; Ebner, C.; Breitenbach, M
Eur. J. Biochem. 212, 355-362, 1993
A;Title: Four recombinant isoforms of Cor a I, the major allergen of hazel pollen, sh
A;Reference number: S30053; MUID:93185652
A;Accession: S30055
A;Molecule type: mRNA
A;Residues: 1-160 <BRE1>
A;Cross-references: EMBL:X70997
R;Breiteneder, H.
submitted to the EMBL Data Library, February 1993
A;Reference number: S35507
A;Accession: S35507
A;Molecule type: mRNA
A;Residues: 1-133,'I',135-160 <BRE2>
A;Cross-references: EMBL:X70997; NID:g22683; PIDN:CAA50325.1; PID:g22684
C;Genetics:
A;Gene: Cor a I/1
C;Superfamily: pathogenesis-related protein
C;Keywords: pollen


  Query Match             75.3%;  Score 616;  DB 2;  Length 160;
  Best Local Similarity   72.3%;  Pred. No. 2.2e-47;
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Search completed: December 11, 2000, 10:41:59
Job time: 116 sec
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GenCore version 4.5


OM protein - protein search, using sw model

Run on: December 11, 2000, 09:41:43 ; Search time 171.63 Seconds
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15.528 Million cell updates/sec

Title: US-09-270-910-37
Perfect score: 819
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Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 164575 seqs, 16761186 residues

Total number of hits satisfying chosen parameters: 164575

Minimum DB seq length: 0
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Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

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| 1 | 815 | 99.5 | 160 | 1 | US-07-847-010-23 | Sequence 23, Appl |
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| 3 | 621 | 75.8 | 160 | 1 | US-07-847-010-14 | Sequence 14, Appl |
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| 5 | 615 | 75.1 | 160 | 1 | US-07-847-010-11 | Sequence 11, Appl |
| 6 | 601 | 73.4 | 160 | 1 | US-07-847-010-20 | Sequence 20, Appl |
| 7 | 377 | 46.0 | 158 | 5 | 5312912-2 | Patent No. 5312912 |
| 8 | 277.5 | 33.9 | 154 | 1 | US-08-363-010-1 | Sequence 1, Appli |
| 9 | 275.5 | 33.6 | 154 | 2 | US-08-911-434A-4 | Sequence 4, Appli |
| 10 | 236 | 28.8 | 158 | 3 | US-08-199-219-6 | Sequence 6, Appli |
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| 19 | 71.5 | 8.7 | 353 | 2 | US-08-538-711A-7 | Sequence 7, Appli |
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| 33 | 67 | 8.2 | 780 | 2 | US-08-973-831-2 | Sequence 2, Appli |
| 34 | 67 | 8.2 | 780 | 4 | PCT-US96-09530A-2 | Sequence 2, Appli |
| 35 | 66.5 | 8.1 | 866 | 1 | US-08-386-727-8 | Sequence 8, Appli |
| 36 | 66.5 | 8.1 | 866 | 2 | US-08-600-452A-8 | Sequence 8, Appli |
| 37 | 66.5 | 8.1 | 906 | 1 | US-08-486-270-2 | Sequence 2, Appli |
| 38 | 66.5 | 8.1 | 906 | 3 | US-08-367-264-2 | Sequence 2, Appli |
| 39 | 66 | 8.1 | 310 | 1 | US-08-129-456A-37 | Sequence 37, Appl |
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| 41 | 66 | 8.1 | 518 | 3 | US-09-329-418-3 | Sequence 3, Appli |
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| 44 | 66 | 8.1 | 1183 | 2 | US-08-447-031A-2 | Sequence 2, Appli |
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ALIGNMENTS

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RESULT 1
US-07-847-010-23
; Sequence 23, Application US/07847010
; Patent No. 5693495
;  GENERAL INFORMATION:
;    APPLICANT:  Breiteneder, Heimo
;    APPLICANT:  Reikerstorfer, Arnold
;    APPLICANT:  Valenta, Rudolf
;    APPLICANT:  Hoffmann - Sommergruber, Karin
;    APPLICANT:  Breitenbach, Michael
;    APPLICANT:  Kraft, Dietrich
;    APPLICANT:  Rumpold, Helmut
;    APPLICANT:  Scheiner, Otto
;    APPLICANT:  Ebner, Christof
;    APPLICANT:  Ferreira, Fatima
;    TITLE OF INVENTION:  Allergens of Alder Pollen and
;    TITLE OF INVENTION:  Applications Thereof
;    NUMBER OF SEQUENCES:  23
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Pennie & Edmonds
;      STREET:  1155 Avenue of the Americas
;      CITY:  New York
;      STATE:  New York
;      COUNTRY:  U.S.A.
;      ZIP:  10036-2711
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/07/847,010
;      FILING DATE:  01-JUN-1992
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Jones III, Harry C
;      REGISTRATION NUMBER:  20,280
;      REFERENCE/DOCKET NUMBER:  6530-010
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (212) 790-9090
;      TELEFAX:  (212) 869-9741/8864
;      TELEX:  66141 PENNIE
;  INFORMATION FOR SEQ ID NO:  23:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  160 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  peptide
;    HYPOTHETICAL:  NO
;    ORIGINAL SOURCE:
;      ORGANISM:  birch (Betula sp.)
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;    IMMEDIATE SOURCE:
;      LIBRARY:  POLLEN FROM ALLERGON AB, ENGELHOLM, SWEDEN
US-07-847-010-23

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Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
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; Sequence 3, Application US/07847010
; Patent No. 5693495
;  GENERAL INFORMATION:
;    APPLICANT:  Breiteneder, Heimo
;    APPLICANT:  Reikerstorfer, Arnold
;    APPLICANT:  Valenta, Rudolf
;    APPLICANT:  Hoffmann - Sommergruber, Karin
;    APPLICANT:  Breitenbach, Michael
;    APPLICANT:  Kraft, Dietrich
;    APPLICANT:  Rumpold, Helmut
;    APPLICANT:  Scheiner, Otto
;    APPLICANT:  Ebner, Christof
;    APPLICANT:  Ferreira, Fatima
;    TITLE OF INVENTION:  Allergens of Alder Pollen and
;    TITLE OF INVENTION:  Applications Thereof
;    NUMBER OF SEQUENCES:  23
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Pennie & Edmonds
;      STREET:  1155 Avenue of the Americas
;      CITY:  New York
;      STATE:  New York
;      COUNTRY:  U.S.A.
;      ZIP:  10036-2711
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/07/847,010
;      FILING DATE:  01-JUN-1992
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Jones III, Harry C
;      REGISTRATION NUMBER:  20,280
;      REFERENCE/DOCKET NUMBER:  6530-010
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (212) 790-9090
;      TELEFAX:  (212) 869-9741/8864
;      TELEX:  66141 PENNIE
;  INFORMATION FOR SEQ ID NO:  3:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  160 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  peptide
;    HYPOTHETICAL:  NO
;    ORIGINAL SOURCE:
;      ORGANISM:  Alder (Alnus sp.)
```

```
US-07-847-010-3

  Query Match             83.4%;  Score 683;  DB 1;  Length 160;
  Best Local Similarity   81.1%;  Pred. No. 9.5e-69;
  Matches  129;  Conservative   12;  Mismatches   18;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
           |||||| || |||||||||||||||| | |||||:|:|||||||||||||||||||:|||
Db       2 GVFNYEAETPSVIPAARLFKAFILDGDKLLPKVAPEAVSSVENIEGNGGPGTIKKITFPE 61

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | |||||:|||||  ||||::|||||| :|| |||: ||||||| ||||||||||||:
Db      62 GSPFKYVKERVDEVDRVNFKYSFSVIEGGAVGDALEKVCNEIKIVAAPDGGSILKISNKF 121

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           |||||||: |||:|  ||    ||:|||||||||||||||
Db     122 HTKGDHEINAEQIKIEKEKAVGLLKAVESYLLAHSDAYN 160


RESULT   3
US-07-847-010-14
; Sequence 14, Application US/07847010
; Patent No. 5693495
;  GENERAL INFORMATION:
;    APPLICANT:  Breiteneder, Heimo
;    APPLICANT:  Reikerstorfer, Arnold
;    APPLICANT:  Valenta, Rudolf
;    APPLICANT:  Hoffmann - Sommergruber, Karin
;    APPLICANT:  Breitenbach, Michael
;    APPLICANT:  Kraft, Dietrich
;    APPLICANT:  Rumpold, Helmut
;    APPLICANT:  Scheiner, Otto
;    APPLICANT:  Ebner, Christof
;    APPLICANT:  Ferreira, Fatima
;    TITLE OF INVENTION:  Allergens of Alder Pollen and
;    TITLE OF INVENTION:  Applications Thereof
;    NUMBER OF SEQUENCES:  23
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Pennie & Edmonds
;      STREET:  1155 Avenue of the Americas
;      CITY:  New York
;      STATE:  New York
;      COUNTRY:  U.S.A.
;      ZIP:  10036-2711
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/07/847,010
;      FILING DATE:  01-JUN-1992
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Jones III, Harry C
;      REGISTRATION NUMBER:  20,280
;      REFERENCE/DOCKET NUMBER:  6530-010
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (212) 790-9090
;      TELEFAX:  (212) 869-9741/8864
;      TELEX:  66141 PENNIE
;  INFORMATION FOR SEQ ID NO:  14:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  160 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  peptide
;    HYPOTHETICAL:  NO
;    ORIGINAL SOURCE:
;      ORGANISM:  hazel (Corylus sp.)
;    IMMEDIATE SOURCE:
;      LIBRARY:  POLLEN FROM ALLERGON AB, ENGELHOLM, SWEDEN
```

US-07-847-010-14

Query Match 75.8%; Score 621; DB 1; Length 160;
Best Local Similarity 73.0%; Pred. No. 7.9e-62;
Matches 116; Conservative 22; Mismatches 21; Indels 0; Gaps 0;

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Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
Db       2 GVFNYEVETPSVIPAARLFKSYVLDGDKLIPKVAPQAITSVENVEGNGGPGTIKNITFGE 61

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
Db      62 GSRYKYVKERVDEVDNTNFKYSYTVIEGDVLGDKLEKVCSELKIVAAPGGGSILKISSKF 121

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
Db     122 HAKGDHEINAEEMKGAKEMAEKLLRAVETYLLAHSAEYN 160
```

RESULT 4
US-07-847-010-17
; Sequence 17, Application US/07847010
; Patent No. 5693495
; GENERAL INFORMATION:
; APPLICANT: Breiteneder, Heimo
; APPLICANT: Reikerstorfer, Arnold
; APPLICANT: Valenta, Rudolf
; APPLICANT: Hoffmann - Sommergruber, Karin
; APPLICANT: Breitenbach, Michael
; APPLICANT: Kraft, Dietrich
; APPLICANT: Rumpold, Helmut
; APPLICANT: Scheiner, Otto
; APPLICANT: Ebner, Christof
; APPLICANT: Ferreira, Fatima
; TITLE OF INVENTION: Allergens of Alder Pollen and
; TITLE OF INVENTION: Applications Thereof
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Pennie & Edmonds
; STREET: 1155 Avenue of the Americas
; CITY: New York
; STATE: New York
; COUNTRY: U.S.A.
; ZIP: 10036-2711
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/07/847,010
; FILING DATE: 01-JUN-1992
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Jones III, Harry C
; REGISTRATION NUMBER: 20,280
; REFERENCE/DOCKET NUMBER: 6530-010
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (212) 790-9090
; TELEFAX: (212) 869-9741/8864
; TELEX: 66141 PENNIE
; INFORMATION FOR SEQ ID NO: 17:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 160 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: peptide
; HYPOTHETICAL: NO
; ORIGINAL SOURCE:
; ORGANISM: hazel (Corylus sp.)
; IMMEDIATE SOURCE:
; LIBRARY: POLLEN FROM ALLERGON AB, ENGELHOLM, SWEDEN

US-07-847-010-17

Query Match 75.8%; Score 621; DB 1; Length 160;
Best Local Similarity 73.0%; Pred. No. 7.9e-62;
Matches 116; Conservative 22; Mismatches 21; Indels 0; Gaps 0;

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Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
Db       2 GVFNYEAETTSVIPAARLFKSYVLDGDKLIPKVAPQAITSVENVEGNGGPGTIKNITFGE 61

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
Db      62 GSRYKYVKERVDEVDNTNFTYSYTVIEGDVLGDKLEKVCHELKIVAAPGGGSILKISSKF 121

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
Db     122 HAKGDHEINAEEMKGAKEMAEKLLRAVETYLLAHSAEYN 160
```

RESULT 5
US-07-847-010-11
; Sequence 11, Application US/07847010
; Patent No. 5693495
; GENERAL INFORMATION:
; APPLICANT: Breiteneder, Heimo
; APPLICANT: Reikerstorfer, Arnold
; APPLICANT: Valenta, Rudolf
; APPLICANT: Hoffmann - Sommergruber, Karin
; APPLICANT: Breitenbach, Michael
; APPLICANT: Kraft, Dietrich
; APPLICANT: Rumpold, Helmut
; APPLICANT: Scheiner, Otto
; APPLICANT: Ebner, Christof
; APPLICANT: Ferreira, Fatima
; TITLE OF INVENTION: Allergens of Alder Pollen and
; TITLE OF INVENTION: Applications Thereof
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Pennie & Edmonds
; STREET: 1155 Avenue of the Americas
; CITY: New York
; STATE: New York
; COUNTRY: U.S.A.
; ZIP: 10036-2711
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/07/847,010
; FILING DATE: 01-JUN-1992
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Jones III, Harry C
; REGISTRATION NUMBER: 20,280
; REFERENCE/DOCKET NUMBER: 6530-010
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (212) 790-9090
; TELEFAX: (212) 869-9741/8864
; TELEX: 66141 PENNIE
; INFORMATION FOR SEQ ID NO: 11:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 160 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: peptide
; HYPOTHETICAL: NO
; ORIGINAL SOURCE:
; ORGANISM: hazel (Corylus sp.)
; IMMEDIATE SOURCE:
; LIBRARY: POLLEN FROM ALLERGON AB, ENGELHOLM, SWEDEN

US-07-847-010-11

Query Match 75.1%; Score 615; DB 1; Length 160;
Best Local Similarity 72.3%; Pred. No. 3.7e-61;
Matches 115; Conservative 22; Mismatches 22; Indels 0; Gaps 0;

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Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
          |||||| || |||||||||||:::|||| | ||||||||:||||:|||||||||| |:| |
Db      2 GVFNYEVETPSVIPAARLFKSYVLDGDKLIPKVAPQAITSVENVEGNGGPGTIKNITFGE 61

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          |  :||||:||||||:||| |:|:|||| :|| |||: :|:|||| | |||||||:|:
Db     62 GSRYKYVKERVDEVDNTNFTYSYTVIEGDVLGDKLEKVCHELKIVAAPGGGSILKISSKF 121

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          | ||||||: ||:::| :||| | ||||||:|||||| ||
Db    122 HAKGDHEINAEEMKGAKEMAEKLLRAVETYLLAHSAEYN 160
```

RESULT 6
US-07-847-010-20
; Sequence 20, Application US/07847010
; Patent No. 5693495
; GENERAL INFORMATION:
; APPLICANT: Breiteneder, Heimo
; APPLICANT: Reikerstorfer, Arnold
; APPLICANT: Valenta, Rudolf
; APPLICANT: Hoffmann - Sommergruber, Karin
; APPLICANT: Breitenbach, Michael
; APPLICANT: Kraft, Dietrich
; APPLICANT: Rumpold, Helmut
; APPLICANT: Scheiner, Otto
; APPLICANT: Ebner, Christof
; APPLICANT: Ferreira, Fatima
; TITLE OF INVENTION: Allergens of Alder Pollen and
; TITLE OF INVENTION: Applications Thereof
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Pennie & Edmonds
; STREET: 1155 Avenue of the Americas
; CITY: New York
; STATE: New York
; COUNTRY: U.S.A.
; ZIP: 10036-2711
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/07/847,010
; FILING DATE: 01-JUN-1992
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Jones III, Harry C
; REGISTRATION NUMBER: 20,280
; REFERENCE/DOCKET NUMBER: 6530-010
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (212) 790-9090
; TELEFAX: (212) 869-9741/8864
; TELEX: 66141 PENNIE
; INFORMATION FOR SEQ ID NO: 20:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 160 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: peptide
; HYPOTHETICAL: NO
; ORIGINAL SOURCE:
; ORGANISM: hazel (Corylus sp.)
; IMMEDIATE SOURCE:
; LIBRARY: POLLEN FROM ALLERGON AB, ENGELHOLM, SWEDEN

US-07-847-010-20

Query Match 73.4%; Score 601; DB 1; Length 160;
Best Local Similarity 71.1%; Pred. No. 1.3e-59;
Matches 113; Conservative 22; Mismatches 24; Indels 0; Gaps 0;

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Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
          |||||| || ||| ||||||:::|||| | ||||||||:||||: |||||||||| |:| |
Db      2 GVFNYEVETPSVISAARLFKSYVLDGDKLIPKVAPQAITSVENVGGNGGPGTIKNITFGE 61

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          |  :||||:||||||:|||||:|:|||| :|| |||: :|:|||| | ||| ||||:|:
Db     62 GSRYKYVKERVDEVDNTNFKYSYTVIEGDVLGDKLEKVCSELKIVAAPGGGSTLKISSKF 121

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          | |||||: ||:::| :||| | ||||||:|||||| ||
Db    122 HAKGDHEINAEEMKGAKEMAEKLLRAVETYLLAHSAEYN 160
```

RESULT 7
5312912-2
;Patent No. 5312912
; APPLICANT: HADWIGER, LEE A.;CHIANG, CHIN C.;HOROVITZ,
;DANIEL A.
; TITLE OF INVENTION: PROCEDURES AND REGULATORY DNA SEQUENCES
;FOR GENETICALLY ENGINEERING DISEASE RESISTANCE AND OTHER
;INDUCIBLE TRAITS IN PLANTS
; NUMBER OF SEQUENCES: 9
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/07/393,301
; FILING DATE: 13-JUN-1989
;SEQ ID NO:2:
; LENGTH: 158
5312912-2

Query Match 46.0%; Score 377; DB 5; Length 158;
Best Local Similarity 50.3%; Pred. No. 1.3e-34;
Matches 80; Conservative 26; Mismatches 51; Indels 2; Gaps 2;

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Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
          ||||:| | ||::  | | || : | | | |||   || |:| :||||||||||::| |
Db      2 GVFNFEEEATSIVAPATLHKALVTDADILTPKVI-DAIKSIEIVEGNGGPGTIKKLTFVE 60

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
             |||  :|: ||  |:  |||:: |  : ||:|||| | |: | |:|||| |:| ||
Db     61 DGETKYVLHKVELVDDANWANNYSIVGGVGLPDTVEKISFEAKLSAGPNGGSIAKLSVKY 120

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          :||||     |::|  |  || : :|:| | :|: | ||
Db    121 YTKGDAIPSEEEIKNGKAKGEGIFKALEGYCVANPD-YN 158
```

RESULT 8
US-08-363-010-1
; Sequence 1, Application US/08363010
; Patent No. 5512484
; GENERAL INFORMATION:
; APPLICANT: Yamamoto, Mika
; APPLICANT: Oheda, Kenji
; TITLE OF INVENTION: CARROT 16 KD PROTEIN, GENE CODING FOR
; TITLE OF INVENTION: SAID PROTEIN AND PLASMID CONTAINING SAID GENE
; NUMBER OF SEQUENCES: 6
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Birch, Stewart, Kolasch & Birch, LLP
; STREET: 8110 Gatehouse Road, Suite 500 East
; CITY: Falls Church
; STATE: Virginia
; COUNTRY: U.S.A.
; ZIP: 22042
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk

```
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.30
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/363,010
;      FILING DATE:  23-DEC-1994
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Svensson, Leonard R.
;      REGISTRATION NUMBER:  30,330
;      REFERENCE/DOCKET NUMBER:  20-3628P
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (703) 205-8000
;      TELEFAX:  (703) 205-8050
;      TELEX:  248345
;  INFORMATION FOR SEQ ID NO:  1:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  154 amino acids
;      TYPE:  amino acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
;    HYPOTHETICAL:  NO
;    ANTI-SENSE:  NO
;    ORIGINAL SOURCE:
;      ORGANISM:  Daucus carota
;      STRAIN:  Kuroda Gosun
US-08-363-010-1


  Query Match             33.9%;  Score 277.5;  DB 1;  Length 154;
  Best Local Similarity   37.0%;  Pred. No. 1.5e-23;
  Matches   57;  Conservative   33;  Mismatches   63;  Indels    1;  Gaps    1;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
           |  ::  | || : | ::|   :|| | : || || |  ||: ::|:|| ||:: |: ||
Db       2 GAQSHSLEITSSVSAEKIFSGIVLDVDTVIPKAAPGAYKSVD-VKGDGGAGTVRIITLPE 60

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | |   :  | | |:     |: :||:|  : : :| |   : :| | ||||| | :  :
Db      61 GSPITSMTVRTDAVNKEALTYDSTVIDGDILLEFIESIETHMVVVPTADGGSITKTTAIF 120

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAH 154
           |||||  |  | :| :      | :|:|:||:|:
Db     121 HTKGDAVVPEENIKFADAQNTALFKAIEAYLIAN 154


RESULT   9
US-08-911-434A-4
; Sequence 4, Application US/08911434A
; Patent No. 5959176
;  GENERAL INFORMATION:
;    APPLICANT:  TORIKAI, Satomi
;    APPLICANT:  OEDA, Kenji
;    TITLE OF INVENTION:  PLANT PROMOTER AND UTILIZATION THEREOF
;    NUMBER OF SEQUENCES:  14
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  BIRCH, STEWART, KOLASCH & BIRCH, LLP
;      STREET:  P.O. BOX 747
;      CITY:  FALLS CHURCH
;      STATE:  VIRGINIA
;      COUNTRY:  UNITED STATES OF AMERICA
;      ZIP:  22040
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.30
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/911,434A
;      FILING DATE:  12-AUG-1997
;      CLASSIFICATION:  800
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Stewart, Raymond C.
;      REGISTRATION NUMBER:  21,066
;      REFERENCE/DOCKET NUMBER:  2185-0199P
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (703)205-8000
;      TELEFAX:  (703)205-8050
;  INFORMATION FOR SEQ ID NO:  4:
;    SEQUENCE CHARACTERISTICS:
;     LENGTH: 154 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
US-08-911-434A-4


  Query Match             33.6%;  Score 275.5;  DB 2;  Length 154;
  Best Local Similarity   37.0%;  Pred. No. 2.6e-23;
  Matches   57;  Conservative   32;  Mismatches   64;  Indels    1;  Gaps    1;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
           |  ::  | |:| : | ::|   :|| | : || || |  ||: ::|:|| ||:: |: ||
Db       2 GAQSHSLEITSSVSAEKIFSGIVLDVDTVIPKAAPGAYKSVD-VKGDGGAGTVRIITLPE 60

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | |   :  |. | |:     |: :||:|  :   :| |   : :| | ||||| | :  :
Db      61 GSPITSMTVRTDAVNKEALTYDSTVIDGDILLGFIESIETHLVVVPTADGGSITKTTAIF 120

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAH 154
           |||||  |  | :| :      | :|:|:||:|:
Db     121 HTKGDAVVPEENIKFADAQNTALFKAIEAYLIAN 154


RESULT  10
US-08-199-219-6
; Sequence 6, Application US/08199219
; Patent No. 6031151
; Patent No. 6031151 5698768
;  GENERAL INFORMATION:
;    APPLICANT:  DRAPER, JOHN
;    TITLE OF INVENTION:  CALLUS-SPECIFIC PROMOTERS
;    NUMBER OF SEQUENCES:  8
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  HALE AND DORR
;      STREET:  1455 PENNSYLVANIA AVENUE, N.W.
;      CITY:  WASHINGTON
;      STATE:  D.C.
;      ZIP:  20004
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25 (EPO)
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/199,219
;      FILING DATE:  01 MARCH 1994
;    PRIOR APPLICATION DATA:
;    PRIOR APPLICATION DATA:  APPLICATION NUMBER:  PCT/GB92/01602
;    PRIOR APPLICATION DATA:  FILING DATE:  02 SEPTEMBER 1992
;  INFORMATION FOR SEQ ID NO:  6:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  158 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
US-08-199-219-6


  Query Match             28.8%;  Score 236;  DB 3;  Length 158;
  Best Local Similarity   35.9%;  Pred. No. 6.9e-19;
  Matches   56;  Conservative   30;  Mismatches   66;  Indels    4;  Gaps    3;

Qy       4 NYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE-GL 62
           ::  |    : | |:||| :||  || ||: |  |:    : |:|  |||::|      :
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Db       5 SWSHEVAVNVAAGRMFKAAMLDWHNLGPKIVPDFIAGGSVVSGDGSVGTIREIKINNPAI 64

Qy      63 PFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKYHT 122
           || |||:|:| |||  |:   :::||| :|   |  :   |   : :|| ::|::  |
Db      65 PFSYVKERLDFVDHDKFEVKQTLVEGGGLGKMFECATTHFKFEPSSNGGCLVKVTASY-- 122

Qy     123 KGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAY 158
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Db     123 KILPGVADESAKA-KEGITNHMKATEAYLLANPTAY 157


RESULT  11
US-08-316-650-12
; Sequence 12, Application US/08316650
; Patent No. 5942496
;  GENERAL INFORMATION:
;    APPLICANT:  Bonadio, Jeffrey
;    APPLICANT:  Roessler, Blake J.
;    APPLICANT:  Goldstein, Steven A.
;    APPLICANT:  Lin, Wushan
;    TITLE OF INVENTION:  METHODS AND COMPOSITIONS
;    TITLE OF INVENTION:  FOR STIMULATING BONE CELLS
;    NUMBER OF SEQUENCES:  15
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Arnold, White & Durkee
;      STREET:  P.O. Box 4433
;      CITY:  Houston
;      STATE:  Texas
;      COUNTRY:  USA
;      ZIP:  77210
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/316,650
;      FILING DATE:  30-SEP-1994
;      CLASSIFICATION:  514
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US 08/199,780
;      FILING DATE:  30-SEP-1994
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Parker, David L.
;      REGISTRATION NUMBER:  32,165
;      REFERENCE/DOCKET NUMBER:  UMIC:008
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (512) 418-3000
;      TELEFAX:  (713) 789-2679
;      TELEX:  79-0924
;  INFORMATION FOR SEQ ID NO:  12:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  1442 amino acids
;      TYPE:  amino acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  peptide
US-08-316-650-12


  Query Match             9.5%;  Score 78;  DB 2;  Length 1442;
  Best Local Similarity   24.1%;  Pred. No. 7.8;
  Matches   38;  Conservative   18;  Mismatches   52;  Indels   50;  Gaps    7;

Qy      25 DGDNLFP----------------KVAPQAISSVENIEGNGGPGTIKKISFPEGL------ 62
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Db    1130 DGSNGIPGPIGPPGPRGRSGETGPVGPPGSPGPPGPGPPGPGI--DMSAFAGLGQREKG 1187

Qy      63 --PFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGG--------S 112
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Db    1188 PDPMQYM--RADEADSTLRQHDVEV------DATLKSLNNQIESIRSPDGSRKNPARTCQ 1239

Qy     113 ILKISNKYHTKGDHEVKAEQ--------VKASKEMGET 142
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Db    1240 DLKLCHPEWKSGDYWIDPNQGCTLDAMKVFCNMETGET 1277


RESULT  12
PCT-US95-02251-12
; Sequence 12, Application PC/TUS9502251
;  GENERAL INFORMATION:
;    APPLICANT:
;    TITLE OF INVENTION:  METHODS AND COMPOSITIONS FOR STIMULATING BONE
;    TITLE OF INVENTION:  CELLS
;    NUMBER OF SEQUENCES:  18
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Arnold, White & Durkee
;      STREET:  P.O. Box 4433
;      CITY:  Houston
;      STATE:  Texas
;      COUNTRY:  United States of America
;      ZIP:  77210
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS/ASCII
;      SOFTWARE:  PatentIn Release #1.0, Version
;      SOFTWARE:  #1.30
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  PCT/US95/02251
;      FILING DATE:  CONCURRENTLY HEREWITH
;      CLASSIFICATION:
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US 08/316,650
;      FILING DATE:  30-SEP-1994
;      CLASSIFICATION:
;      APPLICATION NUMBER:  US 08/199,780
;      FILING DATE:  18-FEB-1994
;      CLASSIFICATION:
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Parker, David L.
;      REGISTRATION NUMBER:  32,165
;      REFERENCE/DOCKET NUMBER:  UMIC009P--
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (512) 418-3000
;      TELEFAX:  (713) 789-2679
;      TELEX:  79-0924
;  INFORMATION FOR SEQ ID NO:  12:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  1442 amino acids
;      TYPE:  amino acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  peptide
PCT-US95-02251-12


  Query Match             9.5%;  Score 78;  DB 4;  Length 1442;
  Best Local Similarity   24.1%;  Pred. No. 7.8;
  Matches   38;  Conservative   18;  Mismatches   52;  Indels   50;  Gaps    7;

Qy      25 DGDNLFP----------------KVAPQAISSVENIEGNGGPGTIKKISFPEGL------ 62
           || |  |                | |          |  |||    :|   ||
Db    1130 DGSNGIPGPIGPPGPRGRSGETGPVGPPGSPGPPGPGPPGPGI--DMSAFAGLGQREKG 1187

Qy      63 --PFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGG--------S 112
             | :|:  | || | |  ::: |        ||: ::|:|: : :|||
Db    1188 PDPMQYM--RADEADSTLRQHDVEV------DATLKSLNNQIESIRSPDGSRKNPARTCQ 1239

Qy     113 ILKISNKYHTKGDHEVKAEQ--------VKASKEMGET 142
           ||: :    ||: :  |        |  : | |||
Db    1240 DLKLCHPEWKSGDYWIDPNQGCTLDAMKVFCNMETGET 1277


RESULT  13
US-08-357-533A-8
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; Sequence 8, Application US/08357533A
; Patent No. 5831050
;  GENERAL INFORMATION:
;    APPLICANT:  JIN, DONALD F
;    APPLICANT:  OPPERMANN, HERMANN
;    APPLICANT:  KUBERASAMPATH, THANGAVEL
;    APPLICANT:  SMART, JOHN E
;    TITLE OF INVENTION:  NOVEL MORPHOGEN CELL SURFACE RECEPTOR
;    NUMBER OF SEQUENCES:  12
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  PATENT ADMINISTRATOR, CREATIVE BIOMOLECULES,
;      ADDRESSEE:  INC
;      STREET:  45 SOUTH STREET
;      CITY:  HOPKINTON
;      STATE:  MA
;      COUNTRY:  USA
;      ZIP:  01748
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/357,533A
;      FILING DATE:  16-DEC-1994
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  KELLY, ROBIN D
;      REGISTRATION NUMBER:  34,637
;      REFERENCE/DOCKET NUMBER:  CRP-073FW
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (508)-435-9001
;      TELEFAX:  (508)-435-0992
;  INFORMATION FOR SEQ ID NO:  8:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  669 amino acids
;      TYPE:  amino acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
;    FEATURE:
;      NAME/KEY:  Protein
;      LOCATION:  1..669
;      OTHER INFORMATION:  /note= "C ELEGANS RECEPTOR KINASE"
US-08-357-533A-8


  Query Match             9.4%;  Score 77;  DB 2;  Length 669;
  Best Local Similarity   24.5%;  Pred. No. 3.2;
  Matches   39;  Conservative   24;  Mismatches   54;  Indels   42;  Gaps    9;

Qy       8 ETTSVIPAARLFKAFILDGD---NLFPKVAP--QAISSVENIEGNGGPGTIKKISFPEGL 62
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Db     216 ETENNVPMVTM-------GDGAGSSVPEVAPIEQQGSTMSTSAGN---------SFPPGI 259

Qy      63 PFKYVKDRVDEVDHTNFKYNYSVIEGGPIG-DTLEK--ISNEIKIVATPDGGSILKISNK 119
              :|| :| :: |:         |  :|  || |  |  :|::      |    :|
Db     260 MPNNMKDMLDVLEETS---------GSGMGPTTLHKLTIGGQIRLTGRVGSGRFGNVS-- 308

Qy     120 YHTKGDHEVKAEQVKASKEMGETLL----RAVESYLLAH 154
             :||:  :|  ||    : |          |: :| |
Db     309 ---RGDYRGEAVAVKVFNALDEPAFHKETEIFETRMLRH 344


RESULT  14
US-08-459-009-8
; Sequence 8, Application US/08459009
; Patent No. 5861479
;  GENERAL INFORMATION:
;    APPLICANT:  JIN, DONALD F
;    APPLICANT:  OPPERMANN, HERMANN
;    APPLICANT:  KUBERASAMPATH, THANGAVEL
;    APPLICANT:  SMART, JOHN E
;    TITLE OF INVENTION:  NOVEL MORPHOGEN CELL SURFACE RECEPTOR
;    NUMBER OF SEQUENCES:  12
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  PATENT ADMINISTRATOR, CREATIVE BIOMOLECULES,
;      ADDRESSEE:  INC
;      STREET:  45 SOUTH STREET
;      CITY:  HOPKINTON
;      STATE:  MA
;      COUNTRY:  USA
;      ZIP:  01748
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/459,009
;      FILING DATE:
;      CLASSIFICATION:  435
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US 08/357,533
;      FILING DATE:  16-DEC-1994
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  KELLY, ROBIN D
;      REGISTRATION NUMBER:  34,637
;      REFERENCE/DOCKET NUMBER:  CRP-073FW
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (508)-435-9001
;      TELEFAX:  (508)-435-0992
;  INFORMATION FOR SEQ ID NO:  8:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  669 amino acids
;      TYPE:  amino acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
;    FEATURE:
;      NAME/KEY:  Protein
;      LOCATION:  1..669
;      OTHER INFORMATION:  /note= "C ELEGANS RECEPTOR KINASE"
US-08-459-009-8


  Query Match             9.4%;  Score 77;  DB 2;  Length 669;
  Best Local Similarity   24.5%;  Pred. No. 3.2;
  Matches   39;  Conservative   24;  Mismatches   54;  Indels   42;  Gaps    9;

Qy       8 ETTSVIPAARLFKAFILDGD---NLFPKVAP--QAISSVENIEGNGGPGTIKKISFPEGL 62
           || : :|   :       ||   :  |:|||  |  |::    ||         ||| |:
Db     216 ETENNVPMVTM-------GDGAGSSVPEVAPIEQQGSTMSTSAGN---------SFPPGI 259

Qy      63 PFKYVKDRVDEVDHTNFKYNYSVIEGGPIG-DTLEK--ISNEIKIVATPDGGSILKISNK 119
              :|| :| :: |:         |  :|  || |  |  :|::      |    :|
Db     260 MPNNMKDMLDVLEETS---------GSGMGPTTLHKLTIGGQIRLTGRVGSGRFGNVS-- 308

Qy     120 YHTKGDHEVKAEQVKASKEMGETLL----RAVESYLLAH 154
             :||:  :|  ||    : |          |: :| |
Db     309 ---RGDYRGEAVAVKVFNALDEPAFHKETEIFETRMLRH 344


RESULT  15
US-08-459-951-8
; Sequence 8, Application US/08459951
; Patent No. 6093547
;  GENERAL INFORMATION:
;    APPLICANT:  JIN, DONALD F
;    APPLICANT:  OPPERMANN, HERMANN
;    APPLICANT:  KUBERASAMPATH, THANGAVEL
;    APPLICANT:  SMART, JOHN E
;    TITLE OF INVENTION:  NOVEL MORPHOGEN CELL SURFACE RECEPTOR
;    NUMBER OF SEQUENCES:  12
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  PATENT ADMINISTRATOR, CREATIVE BIOMOLECULES,
```

```
;       ADDRESSEE:  INC
;       STREET:  45 SOUTH STREET
;       CITY:  HOPKINTON
;       STATE:  MA
;       COUNTRY:  USA
;       ZIP:  01748
;     COMPUTER READABLE FORM:
;       MEDIUM TYPE:  Floppy disk
;       COMPUTER:  IBM PC compatible
;       OPERATING SYSTEM:  PC-DOS/MS-DOS
;       SOFTWARE:  PatentIn Release #1.0, Version #1.25
;     CURRENT APPLICATION DATA:
;       APPLICATION NUMBER:  US/08/459,951
;       FILING DATE:
;       CLASSIFICATION:  435
;     PRIOR APPLICATION DATA:
;       APPLICATION NUMBER:  US 08/357,533
;       FILING DATE:  16-DEC-1994
;     ATTORNEY/AGENT INFORMATION:
;       NAME:  KELLY, ROBIN D
;       REGISTRATION NUMBER:  34,637
;       REFERENCE/DOCKET NUMBER:  CRP-073FW
;     TELECOMMUNICATION INFORMATION:
;       TELEPHONE:  (508)-435-9001
;       TELEFAX:  (508)-435-0992
;   INFORMATION FOR SEQ ID NO:  8:
;     SEQUENCE CHARACTERISTICS:
;       LENGTH:  669 amino acids
;       TYPE:  amino acid
;       STRANDEDNESS:  single
;       TOPOLOGY:  linear
;     MOLECULE TYPE:  protein
;     FEATURE:
;       NAME/KEY:  Protein
;       LOCATION:  1..669
;       OTHER INFORMATION:  /note= "C ELEGANS RECEPTOR KINASE"
US-08-459-951-8


  Query Match             9.4%;  Score 77;  DB 3;  Length 669;
  Best Local Similarity   24.5%;  Pred. No. 3.2;
  Matches   39;  Conservative   24;  Mismatches   54;  Indels   42;  Gaps    9;

Qy       8 ETTSVIPAARLFKAFILDGD---NLFPKVAP--QAISSVENIEGNGGPGTIKKISFPEGL 62
           || : :|   :       ||   :  |:|||  |  |::   ||         ||| |:
Db     216 ETENNVPMVTM-------GDGAGSSVPEVAPIEQQGSTMSTSAGN---------SFPPGI 259

Qy      63 PFKYVKDRVDEVDHTNFKYNYSVIEGGPIG-DTLEK--ISNEIKIVATPDGGSILKISNK 119
              :|| :| :: |:         |  :|  || |  |  :|::      |    :|
Db     260 MPNNMKDMLDVLEETS---------GSGMGPTTLHKLTIGGQIRLTGRVGSGRFGNVS-- 308

Qy     120 YHTKGDHEVKAEQVKASKEMGETLL----RAVESYLLAH 154
             :||:  :|  ||    : |          |: :| |
Db     309 ---RGDYRGEAVAVKVFNALDEPAFHKETEIFETRMLRH 344


Search completed: December 11, 2000, 09:50:02
Job time: 499 sec
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GenCore version 4.5


OM protein - protein search, using sw model

Run on: December 11, 2000, 09:47:12 ; Search time 277.19 Seconds
(without alignments)
18.326 Million cell updates/sec

Title: US-09-270-910-37
Perfect score: 819
Sequence: 1 GVFNYETETTSVIPAARLFK.....GETLLRAVESYLLAHSDAYN 159

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 87993 seqs, 31947931 residues

Total number of hits satisfying chosen parameters: 87993

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : SwissProt_39:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

| Result No. | Score | % Query Match | Length | DB | ID | Description |
|---|---|---|---|---|---|---|
| 1 | 815 | 99.5 | 159 | 1 | BV1A_BETVE | P15494 betula verr |
| 2 | 795 | 97.1 | 159 | 1 | BV1J_BETVE | P43183 betula verr |
| 3 | 790 | 96.5 | 159 | 1 | BV1E_BETVE | P43178 betula verr |
| 4 | 789 | 96.3 | 159 | 1 | BV1F_BETVE | P43179 betula verr |
| 5 | 787 | 96.1 | 159 | 1 | BV1D_BETVE | P43177 betula verr |
| 6 | 786 | 96.0 | 159 | 1 | BV1G_BETVE | P43180 betula verr |
| 7 | 780 | 95.2 | 159 | 1 | BV1L_BETVE | P43185 betula verr |
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| 9 | 734 | 89.6 | 159 | 1 | BV1B_BETVE | P45431 betula verr |
| 10 | 730 | 89.1 | 159 | 1 | BV1K_BETVE | P43184 betula verr |
| 11 | 722 | 88.2 | 159 | 1 | BV1C_BETVE | P43176 betula verr |
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| 13 | 640 | 78.1 | 159 | 1 | MPA2_CARBE | P38950 carpinus be |
| 14 | 619 | 75.6 | 159 | 1 | MPA1_CARBE | P38949 carpinus be |
| 15 | 615 | 75.1 | 159 | 1 | MPAA_CORAV | Q08407 corylus ave |
| 16 | 505 | 61.7 | 160 | 1 | PRU1_PRUAV | O24248 prunus aviu |
| 17 | 463.5 | 56.6 | 158 | 1 | MAL1_MALDO | P43211 malus domes |
| 18 | 420.5 | 51.3 | 157 | 1 | PR1_MEDSA | Q43560 medicago sa |
| 19 | 386 | 47.1 | 158 | 1 | DRR3_PEA | P14710 pisum sativ |
| 20 | 382 | 46.6 | 158 | 1 | AB18_PEA | Q06930 pisum sativ |
| 21 | 381 | 46.5 | 158 | 1 | SAM2_SOYBN | P26987 glycine max |
| 22 | 377 | 46.0 | 158 | 1 | DRR4_PEA | P27047 pisum sativ |
| 23 | 374.5 | 45.7 | 159 | 1 | DRR1_PEA | P13239 pisum sativ |
| 24 | 370 | 45.2 | 155 | 1 | PR1_PHAVU | P25985 phaseolus v |
| 25 | 362.5 | 44.3 | 155 | 1 | PR2_PHAVU | P25986 phaseolus v |
| 26 | 349 | 42.6 | 156 | 1 | L18B_LUPLU | P52779 lupinus lut |
| 27 | 342.5 | 41.8 | 155 | 1 | PRS1_SOLTU | P17641 solanum tub |
| 28 | 342.5 | 41.8 | 155 | 1 | PRS2_SOLTU | P17642 solanum tub |
| 29 | 340 | 41.5 | 156 | 1 | L18A_LUPLU | P52778 lupinus lut |
| 30 | 332.5 | 40.6 | 157 | 1 | AB17_PEA | Q06931 pisum sativ |
| 31 | 330.5 | 40.4 | 158 | 1 | PR2_PETCR | P27538 petroselinu |
| 32 | 327 | 39.9 | 154 | 1 | RNS1_PANGI | P80889 panax ginse |
| 33 | 316 | 38.6 | 155 | 1 | PR11_PETCR | P19417 petroselinu |
| 34 | 312.5 | 38.2 | 153 | 1 | RNS2_PANGI | P80890 panax ginse |
| 35 | 312 | 38.1 | 155 | 1 | PR13_PETCR | P19418 petroselinu |
| 36 | 310.5 | 37.9 | 154 | 1 | MPAG_APIGR | P49372 apium grave |
| 37 | 301 | 36.8 | 157 | 1 | RAP_TAROF | O49065 taraxacum o |
| 38 | 278.5 | 34.0 | 154 | 1 | DAU1_DAUCA | O04298 daucus car |
| 39 | 236 | 28.8 | 158 | 1 | PR1_ASPOF | Q05736 asparagus c |
| 40 | 88 | 10.7 | 615 | 1 | DNAK_THETH | Q56235 thermus aqu |
| 41 | 80.5 | 9.8 | 956 | 1 | CB31_YEAST | P32504 saccharomyc |
| 42 | 79 | 9.6 | 387 | 1 | YRS8_CAEEL | Q10004 caenorhabdi |
| 43 | 79 | 9.6 | 726 | 1 | NU84_YEAST | P52891 saccharomyc |
| 44 | 78 | 9.5 | 1459 | 1 | CA12_MOUSE | P28481 mus musculu |
| 45 | 77.5 | 9.5 | 889 | 1 | NODV_BRAJA | P15939 bradyrhizob |

ALIGNMENTS

RESULT 1
BV1A_BETVE
ID BV1A_BETVE STANDARD; PRT; 159 AA.
AC P15494; Q96369;
DT 01-APR-1990 (Rel. 14, Created)
DT 01-APR-1990 (Rel. 14, Last sequence update)
DT 15-JUL-1998 (Rel. 36, Last annotation update)
DE MAJOR POLLEN ALLERGEN BET V 1-A (BET V I-A).
GN BETVIA OR BETVI.
OS Betula verrucosa (White birch) (Betula pendula).
OC Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC Fagales; Betulaceae; Betula.
RN [1]
RP SEQUENCE FROM N.A., AND SEQUENCE OF 1-34.
RC TISSUE=POLLEN;
RX MEDLINE; 90005395.
RA Breiteneder H., Pettenburger K., Bito A., Valenta R., Kraft D.,
RA Rumpold H., Scheiner O., Breitenbach M.;
RT "The gene coding for the major birch pollen allergen Betv1, is highly
RT homologous to a pea disease resistance response gene.";
RL EMBO J. 8:1935-1938(1989).
RN [2]
RP SEQUENCE FROM N.A.
RC TISSUE=POLLEN;
RA Larsen J.N.;
RL Submitted (SEP-1996) to the EMBL/GenBank/DDBJ databases.
RN [3]
RP SEQUENCE.
RC TISSUE=POLLEN;
RX MEDLINE; 95155322.
RA Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber K.,
RA Scheiner O., Kraft D., Breiteneder H., Pittenauer E., Schmid E.,
RA Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;
RT "Isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT liquid chromatography, mass spectrometry, and cDNA cloning.";
RL J. Biol. Chem. 270:2607-2613(1995).
RN [4]
RP PARTIAL SEQUENCE.
RX MEDLINE; 91317572.
RA Elsayed S., Vik H.;
RT "Purification and N-terminal amino acid sequence of two birch pollen
RT isoallergens (Bet v I and Bet v II).";
RL Int. Arch. Allergy Appl. Immunol. 93:378-384(1990).
RN [5]
RP X-RAY CRYSTALLOGRAPHY (2.0 ANGSTROMS), AND STRUCTURE BY NMR.
RX MEDLINE; 97102431.
RA Gajhede M., Osmark P., Poulsen F.M., Ipsen H., Larsen J.N.,
RA van Neerven R.J.J., Schou C., Loewenstein H., Spangfort M.D.;
RT "X-ray and NMR structure of Bet v 1, the origin of birch pollen
RT allergy.";
RL Nat. Struct. Biol. 3:1040-1045(1996).
CC -!- SUBCELLULAR LOCATION: CYTOPLASMIC.
CC -!- DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC AMERICA AND USSR.
CC -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED

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CC       PROTEIN.
CC   ---------------------------------------------------------------------
CC   This SWISS-PROT entry is copyright. It is produced through a collaboration
CC   between the Swiss Institute of Bioinformatics and the EMBL outstation -
CC   the European Bioinformatics Institute. There are no restrictions on its
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CC   entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; X15877; CAA33887.1; -.
DR   EMBL; Z80098; CAB02153.1; -.
DR   EMBL; Z80099; CAB02154.1; -.
DR   EMBL; Z80104; CAB02159.1; -.
DR   PIR; S05376; S05376.
DR   PDB; 1BTV; 12-AUG-97.
DR   PDB; 1BV1; 17-SEP-97.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
KW   Pathogenesis-related protein; Allergen; Multigene family;
KW   3D-structure.
FT   INIT_MET      0      0
FT   VARIANT      62     62       F -> L.
SQ   SEQUENCE   159 AA;  17440 MW;  96E181194BBA83E6 CRC64;


  Query Match             99.5%;  Score 815;  DB 1;  Length 159;
  Best Local Similarity   99.4%;  Pred. No. 1.7e-63;
  Matches  158;  Conservative    0;  Mismatches    1;  Indels    0;  Gaps    0;

Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          | ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     61 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          |||||||||||||||||||||||||||||||||||||||
Db    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159


RESULT   2
BV1J_BETVE
ID   BV1J_BETVE     STANDARD;      PRT;   159 AA.
AC   P43183;
DT   01-NOV-1995 (Rel. 32, Created)
DT   01-NOV-1995 (Rel. 32, Last sequence update)
DT   01-NOV-1997 (Rel. 35, Last annotation update)
DE   MAJOR POLLEN ALLERGEN BET V 1-J (BET V I-J).
GN   BETV1J.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC   Fagales; Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
RC   TISSUE=POLLEN;
RX   MEDLINE; 95155322.
RA   Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber K.,
RA   Scheiner O., Kraft D., Breiteneder H., Pittenauer E., Schmid E.,
RA   Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;
RT   "Isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT   liquid chromatography, mass spectrometry, and cDNA cloning.";
RL   J. Biol. Chem. 270:2607-2613(1995).
CC   -!- SUBCELLULAR LOCATION: CYTOPLASMIC.
CC   -!- DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC       AMERICA AND USSR.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
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CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; X77271; CAA54487.1; -.
DR   HSSP; P15494; 1BTV.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
KW   Pathogenesis-related protein; Allergen; Multigene family.
FT   INIT_MET      0      0
SQ   SEQUENCE   159 AA;  17408 MW;  D2AC26E9E7710A8D CRC64;


  Query Match             97.1%;  Score 795;  DB 1;  Length 159;
  Best Local Similarity   95.6%;  Pred. No. 8.8e-62;
  Matches  152;  Conservative    5;  Mismatches    2;  Indels    0;  Gaps    0;

Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
          |||||||| ||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1 GVFNYETEATSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          | ||||||||||||||||||:||||||:||||||||||||||||||:|||||||:|||
Db     61 GFPFKYVKDRVDEVDHTNFKYSYSVIEGGPVGDTLEKISNEIKIVATPNGGSILKINNKY 120

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          ||||||||||:||||||||||||||||||||||||||||
Db    121 HTKGDHEVKAEQIKASKEMGETLLRAVESYLLAHSDAYN 159


RESULT   3
BV1E_BETVE
ID   BV1E_BETVE     STANDARD;      PRT;   159 AA.
AC   P43178;
DT   01-NOV-1995 (Rel. 32, Created)
DT   01-NOV-1995 (Rel. 32, Last sequence update)
DT   01-NOV-1997 (Rel. 35, Last annotation update)
DE   MAJOR POLLEN ALLERGEN BET V 1-E (BET V I-E).
GN   BETV1E.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC   Fagales; Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
RC   TISSUE=POLLEN;
RX   MEDLINE; 95155322.
RA   Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber K.,
RA   Scheiner O., Kraft D., Breiteneder H., Pittenauer E., Schmid E.,
RA   Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;
RT   "Isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT   liquid chromatography, mass spectrometry, and cDNA cloning.";
RL   J. Biol. Chem. 270:2607-2613(1995).
CC   -!- SUBCELLULAR LOCATION: CYTOPLASMIC.
CC   -!- DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC       AMERICA AND USSR.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
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CC   ----------------------------------------------------------------------
DR   EMBL; X77267; CAA54483.1; -.
DR   HSSP; P15494; 1BTV.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
KW   Pathogenesis-related protein; Allergen; Multigene family.
FT   INIT_MET      0      0
SQ   SEQUENCE   159 AA;  17316 MW;  3E752543EDD1A08E CRC64;


  Query Match             96.5%;  Score 790;  DB 1;  Length 159;
  Best Local Similarity   95.0%;  Pred. No. 2.4e-61;
  Matches  151;  Conservative    6;  Mismatches    2;  Indels    0;  Gaps    0;

Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
          |||||||| ||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1 GVFNYETEATSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          |:||||| |||||||||||:||||||||:||||||||||||||||:|||||||:|||
Db     61 GIPFKYVKGRVDEVDHTNFKYSYSVIEGGPVGDTLEKISNEIKIVATPNGGSILKINNKY 120

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          ||||||||||||:||||||||||||||||||||||||||
Db    121 HTKGDHEVKAEQIKASKEMGETLLRAVESYLLAHSDAYN 159


RESULT   4
BV1F_BETVE
ID   BV1F_BETVE     STANDARD;      PRT;   159 AA.
AC   P43179;
DT   01-NOV-1995 (Rel. 32, Created)
DT   01-NOV-1995 (Rel. 32, Last sequence update)
DT   01-NOV-1997 (Rel. 35, Last annotation update)
DE   MAJOR POLLEN ALLERGEN BET V 1-F/I (BET V I-F/I).
GN   BETV1F AND BETV1I.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC   Fagales; Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
RC   TISSUE=POLLEN;
RX   MEDLINE; 95155322.
RA   Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber K.,
RA   Scheiner O., Kraft D., Breiteneder H., Pittenauer E., Schmid E.,
RA   Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;
RT   "Isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT   liquid chromatography, mass spectrometry, and cDNA cloning.";
RL   J. Biol. Chem. 270:2607-2613(1995).
CC   -!- SUBCELLULAR LOCATION: CYTOPLASMIC.
CC   -!- DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC       AMERICA AND USSR.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
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CC   or send an email to license@isb-sib.ch).
CC   ----------------------------------------------------------------------
DR   EMBL; X77268; CAA54484.1; -.
DR   EMBL; X77274; CAA54490.1; -.
DR   HSSP; P15494; 1BTV.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
KW   Pathogenesis-related protein; Allergen; Multigene family.
FT   INIT_MET      0      0
SQ   SEQUENCE   159 AA;  17421 MW;  6063F9C82A71165C CRC64;


  Query Match             96.3%;  Score 789;  DB 1;  Length 159;
  Best Local Similarity   95.0%;  Pred. No. 2.9e-61;
  Matches  151;  Conservative    5;  Mismatches    3;  Indels    0;  Gaps    0;

Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
          ||||||| | ||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      1 GVFNYEIEATSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          | ||||||||||||||||||:||||||||:||||||||||||||||:|||||||:|||
Db     61 GFPFKYVKDRVDEVDHTNFKYSYSVIEGGPVGDTLEKISNEIKIVATPNGGSILKINNKY 120

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          ||||||||||||:||||||||||||||||||||||||||
Db    121 HTKGDHEVKAEQIKASKEMGETLLRAVESYLLAHSDAYN 159


RESULT   5
BV1D_BETVE
ID   BV1D_BETVE     STANDARD;      PRT;   159 AA.
AC   P43177;
DT   01-NOV-1995 (Rel. 32, Created)
DT   01-NOV-1995 (Rel. 32, Last sequence update)
DT   01-NOV-1997 (Rel. 35, Last annotation update)
DE   MAJOR POLLEN ALLERGEN BET V 1-D/H (BET V I-D/H).
GN   BETV1D AND BETV1H.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC   Fagales; Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
RC   TISSUE=POLLEN;
RX   MEDLINE; 95155322.
RA   Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber K.,
RA   Scheiner O., Kraft D., Breiteneder H., Pittenauer E., Schmid E.,
RA   Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;
RT   "Isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT   liquid chromatography, mass spectrometry, and cDNA cloning.";
RL   J. Biol. Chem. 270:2607-2613(1995).
CC   -!- SUBCELLULAR LOCATION: CYTOPLASMIC.
CC   -!- DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC       AMERICA AND USSR.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
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CC   ----------------------------------------------------------------------
DR   EMBL; X77266; CAA54482.1; -.
DR   EMBL; X77270; CAA54486.1; -.
DR   HSSP; P15494; 1BTV.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
KW   Pathogenesis-related protein; Allergen; Multigene family.
FT   INIT_MET      0      0
SQ   SEQUENCE   159 AA;  17418 MW;  8D1F3F8FE56106FD CRC64;


  Query Match             96.1%;  Score 787;  DB 1;  Length 159;
  Best Local Similarity   95.0%;  Pred. No. 4.3e-61;
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  Matches  151;  Conservative    4;  Mismatches    4;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
           |||||| |||||||||||||||||||||| |||||||||||||||||||||||||||:|||
Db       1 GVFNYEIETTSVIPAARLFKAFILDGDNLVPKVAPQAISSVENIEGNGGPGTIKKINFPE 60

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | |||||||||||||||||||||||||||:||||||||||||||||||| :|||||||
Db      61 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPVGDTLEKISNEIKIVATPDGGCVLKISNKY 120

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           ||||:|||||||||||||||||||||||||||||||||||
Db     121 HTKGNHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159


RESULT   6
BV1G_BETVE
ID   BV1G_BETVE     STANDARD;      PRT;   159 AA.
AC   P43180;
DT   01-NOV-1995 (Rel. 32, Created)
DT   01-NOV-1995 (Rel. 32, Last sequence update)
DT   01-NOV-1997 (Rel. 35, Last annotation update)
DE   MAJOR POLLEN ALLERGEN BET V 1-G (BET V I-G).
GN   BETV1G.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC   Fagales; Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
RC   TISSUE=POLLEN;
RX   MEDLINE; 95155322.
RA   Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber K.,
RA   Scheiner O., Kraft D., Breiteneder H., Pittenauer E., Schmid E.,
RA   Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;
RT   "Isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT   liquid chromatography, mass spectrometry, and cDNA cloning.";
RL   J. Biol. Chem. 270:2607-2613(1995).
CC   -!- SUBCELLULAR LOCATION: CYTOPLASMIC.
CC   -!- DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC       AMERICA AND USSR.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
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CC   ---------------------------------------------------------------------
DR   EMBL; X77269; CAA54485.1; -.
DR   HSSP; P15494; 1BTV.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
KW   Pathogenesis-related protein; Allergen; Multigene family.
FT   INIT_MET      0      0
SQ   SEQUENCE   159 AA;  17420 MW;  BBAEE6DCCE241DBB CRC64;


  Query Match             96.0%;  Score 786;  DB 1;  Length 159;
  Best Local Similarity   94.3%;  Pred. No. 5.2e-61;
  Matches  150;  Conservative    6;  Mismatches    3;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
           ||||||:||||||||||||||||:|||| ||||||||||||||||||||||||:|||
Db       1 GVFNYESETTSVIPAARLFKAFILEGDNLIPKVAPQAISSVENIEGNGGPGTIKKINFPE 60

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | |||||||||||||||||||||||||||:||||||||||||||||||| :|||||||
Db      61 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPVGDTLEKISNEIKIVATPDGGCVLKISNKY 120

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           ||||:|||||||||||||||||||||||||||||||||||
Db     121 HTKGNHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159


RESULT   7
BV1L_BETVE
ID   BV1L_BETVE     STANDARD;      PRT;   159 AA.
AC   P43185;
DT   01-NOV-1995 (Rel. 32, Created)
DT   01-NOV-1995 (Rel. 32, Last sequence update)
DT   01-NOV-1997 (Rel. 35, Last annotation update)
DE   MAJOR POLLEN ALLERGEN BET V 1-L (BET V I-L).
GN   BETV1L.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC   Fagales; Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=POLLEN;
RX   MEDLINE; 95155322.
RA   Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber K.,
RA   Scheiner O., Kraft D., Breiteneder H., Pittenauer E., Schmid E.,
RA   Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;
RT   "Isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT   liquid chromatography, mass spectrometry, and cDNA cloning.";
RL   J. Biol. Chem. 270:2607-2613(1995).
CC   -!- SUBCELLULAR LOCATION: CYTOPLASMIC.
CC   -!- DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC       AMERICA AND USSR.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
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CC   ---------------------------------------------------------------------
DR   EMBL; X77273; CAA54489.1; -.
DR   HSSP; P15494; 1BTV.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
KW   Pathogenesis-related protein; Allergen; Multigene family.
FT   INIT_MET      0      0       BY SIMILARITY.
SQ   SEQUENCE   159 AA;  17408 MW;  DE85F4ACC647BE0D CRC64;


  Query Match             95.2%;  Score 780;  DB 1;  Length 159;
  Best Local Similarity   93.7%;  Pred. No. 1.7e-60;
  Matches  149;  Conservative    5;  Mismatches    5;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
           |||||||| |||||||:|||||||| | ||||||||||||||||||||||||:|||
Db       1 GVFNYETEATSVIPAARMFKAFILDGDKLVPKVAPQAISSVENIEGNGGPGTIKKINFPE 60

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | |||||||||||||||||||||||||||:||||||||||||||||||| :|||||||
Db      61 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPVGDTLEKISNEIKIVATPDGGCVLKISNKY 120

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           ||||:|||||||||||||||||||||||||||||||||||
Db     121 HTKGNHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159


RESULT   8
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BV1M_BETVE
ID   BV1M_BETVE     STANDARD;      PRT;   159 AA.
AC   P43186;
DT   01-NOV-1995 (Rel. 32, Created)
DT   01-NOV-1995 (Rel. 32, Last sequence update)
DT   01-NOV-1997 (Rel. 35, Last annotation update)
DE   MAJOR POLLEN ALLERGEN BET V 1-M/N (BET V I-M/N).
GN   BETV1M AND BETV1N.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC   Fagales; Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
RC   TISSUE=POLLEN;
RX   MEDLINE; 95155322.
RA   Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber K.,
RA   Scheiner O., Kraft D., Breiteneder H., Pittenauer E., Schmid E.,
RA   Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;
RT   "Isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT   liquid chromatography, mass spectrometry, and cDNA cloning.";
RL   J. Biol. Chem. 270:2607-2613(1995).
CC   -!- SUBCELLULAR LOCATION: CYTOPLASMIC.
CC   -!- DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC       AMERICA AND USSR.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
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CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; X81972; CAA57497.1; -.
DR   EMBL; X82028; CAA57550.1; -.
DR   HSSP; P15494; 1BTV.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
KW   Pathogenesis-related protein; Allergen; Multigene family.
FT   INIT_MET      0      0
SQ   SEQUENCE   159 AA;  17391 MW;  ABA014F8849985E2 CRC64;


  Query Match             90.4%;  Score 740;  DB 1;  Length 159;
  Best Local Similarity   89.3%;  Pred. No. 4.7e-57;
  Matches  142;  Conservative    8;  Mismatches    9;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
             ||||||:|||||||||||||||||||||| |||||||||||||||||||||||||:|||
Db       1 GVFNYESETTSVIPAARLFKAFILDGDNLIPKVAPQAISSVENIEGNGGPGTIKKITFPE 60

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
             | ||||||:|||||||| ||||:||:|||| :||||||| ||||||||||||||||||||
Db      61 GSPFKYVKERVDEVDHANFKYSYSMIEGGALGDTLEKICNEIKIVATPDGGSILKISNKY 120

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           |||||||:||| :|| || || ||||||||||||||||
Db     121 HTKGDHEMKAEHMKAIKEKGEALLRAVESYLLAHSDAYN 159


RESULT   9
BV1B_BETVE
ID   BV1B_BETVE     STANDARD;      PRT;   159 AA.
AC   P45431;
DT   01-NOV-1995 (Rel. 32, Created)
DT   01-NOV-1995 (Rel. 32, Last sequence update)
DT   01-NOV-1997 (Rel. 35, Last annotation update)
DE   MAJOR POLLEN ALLERGEN BET V 1-B (BET V I-B).
GN   BETV1B.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC   Fagales; Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
RC   TISSUE=POLLEN;
RX   MEDLINE; 95155322.
RA   Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber K.,
RA   Scheiner O., Kraft D., Breiteneder H., Pittenauer E., Schmid E.,
RA   Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;
RT   "Isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT   liquid chromatography, mass spectrometry, and cDNA cloning.";
RL   J. Biol. Chem. 270:2607-2613(1995).
CC   -!- SUBCELLULAR LOCATION: CYTOPLASMIC.
CC   -!- DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC       AMERICA AND USSR.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
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CC   ---------------------------------------------------------------------
DR   EMBL; X77200; CAA54421.1; -.
DR   HSSP; P15494; 1BTV.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
KW   Pathogenesis-related protein; Allergen; Multigene family.
FT   INIT_MET      0      0
SQ   SEQUENCE   159 AA;  17406 MW;  ECC8D391E0C96267 CRC64;


  Query Match             89.6%;  Score 734;  DB 1;  Length 159;
  Best Local Similarity   88.7%;  Pred. No. 1.6e-56;
  Matches  141;  Conservative    8;  Mismatches   10;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
             |||||||||||||||||||||||:|| | |||||||||||||||||||||||||:|||
Db       1 GVFNYETETTSVIPAARLFKAFILEGDTLIPKVAPQAISSVENIEGNGGPGTIKKITFPE 60

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
             | ||||||:|||||||| ||||:||:|||| :||||||| ||||||||||||||||||||
Db      61 GSPFKYVKERVDEVDHANFKYSYSMIEGGALGDTLEKICNEIKIVATPDGGSILKISNKY 120

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           |||||||:||| :|| || || ||||||||||||||||
Db     121 HTKGDHEMKAEHMKAIKEKGEALLRAVESYLLAHSDAYN 159


RESULT  10
BV1K_BETVE
ID   BV1K_BETVE     STANDARD;      PRT;   159 AA.
AC   P43184;
DT   01-NOV-1995 (Rel. 32, Created)
DT   01-NOV-1995 (Rel. 32, Last sequence update)
DT   01-NOV-1997 (Rel. 35, Last annotation update)
DE   MAJOR POLLEN ALLERGEN BET V 1-K (BET V I-K).
GN   BETV1K.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC   Fagales; Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
RC   TISSUE=POLLEN;
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RX   MEDLINE; 95155322.
RA   Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber K.,
RA   Scheiner O., Kraft D., Breiteneder H., Pittenauer E., Schmid E.,
RA   Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;
RT   "Isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT   liquid chromatography, mass spectrometry, and cDNA cloning.";
RL   J. Biol. Chem. 270:2607-2613(1995).
CC   -!- SUBCELLULAR LOCATION: CYTOPLASMIC.
CC   -!- DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC       AMERICA AND USSR.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
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CC   ---------------------------------------------------------------------
DR   EMBL; X77272; CAA54488.1; -.
DR   HSSP; P15494; 1BTV.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
KW   Pathogenesis-related protein; Allergen; Multigene family.
FT   INIT_MET      0      0
SQ   SEQUENCE   159 AA;  17392 MW;  AAF9E6F197C96517 CRC64;


  Query Match             89.1%;  Score 730;  DB 1;  Length 159;
  Best Local Similarity   88.1%;  Pred. No. 3.4e-56;
  Matches  140;  Conservative    9;  Mismatches   10;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
           ||||||:||||||||||||||||:|| | |||||||||||||||||||||||||:|||
Db       1 GVFNYESETTSVIPAARLFKAFILEGDTLIPKVAPQAISSVENIEGNGGPGTIKKITFPE 60

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | |||||||:||||||| ||||:||:|||| :|||||||| ||||||||||||||||||||
Db      61 GSPFKYVKERVDEVDHANFKYSYSMIEGGALGDTLEKICNEIKIVATPDGGSILKISNKY 120

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           |||||||:||| :|| || || ||||||||||||||||||
Db     121 HTKGDHEMKAEHMKAIKEKGEALLRAVESYLLAHSDAYN 159


RESULT  11
BV1C_BETVE
ID   BV1C_BETVE     STANDARD;      PRT;   159 AA.
AC   P43176;
DT   01-NOV-1995 (Rel. 32, Created)
DT   01-NOV-1995 (Rel. 32, Last sequence update)
DT   01-NOV-1997 (Rel. 35, Last annotation update)
DE   MAJOR POLLEN ALLERGEN BET V 1-C (BET V I-C).
GN   BETV1C.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC   Fagales; Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
RC   TISSUE=POLLEN;
RX   MEDLINE; 95155322.
RA   Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber K.,
RA   Scheiner O., Kraft D., Breiteneder H., Pittenauer E., Schmid E.,
RA   Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;
RT   "Isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT   liquid chromatography, mass spectrometry, and cDNA cloning.";
RL   J. Biol. Chem. 270:2607-2613(1995).
CC   -!- SUBCELLULAR LOCATION: CYTOPLASMIC.
CC   -!- DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC       AMERICA AND USSR.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
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CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; X77265; CAA54481.1; -.
DR   HSSP; P15494; 1BTV.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
KW   Pathogenesis-related protein; Allergen; Multigene family.
FT   INIT_MET      0      0
SQ   SEQUENCE   159 AA;  17383 MW;  AAEFA495A7C96517 CRC64;


  Query Match             88.2%;  Score 722;  DB 1;  Length 159;
  Best Local Similarity   87.4%;  Pred. No. 1.7e-55;
  Matches  139;  Conservative    9;  Mismatches   11;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
           ||||||:||||||||||||||||:|| | |||||||||||||||||||||||||:|||
Db       1 GVFNYESETTSVIPAARLFKAFILEGDTLIPKVAPQAISSVENIEGNGGPGTIKKITFPE 60

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | |||||||:||||||| ||||:||:|||| :|||||||| ||||||||||||||||||||
Db      61 GSPFKYVKERVDEVDHANFKYSYSMIEGGALGDTLEKICNEIKIVATPDGGSILKISNKY 120

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           |||||:|:||| :|| || || ||||||||||||||||||
Db     121 HTKGDQEMKAEHMKAIKEKGEALLRAVESYLLAHSDAYN 159


RESULT  12
MPAG_ALNGL
ID   MPAG_ALNGL     STANDARD;      PRT;   159 AA.
AC   P38948;
DT   01-FEB-1995 (Rel. 31, Created)
DT   01-FEB-1995 (Rel. 31, Last sequence update)
DT   01-NOV-1997 (Rel. 35, Last annotation update)
DE   MAJOR POLLEN ALLERGEN ALN G 1 (ALN G I).
OS   Alnus glutinosa (Alder).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC   Fagales; Betulaceae; Alnus.
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=POLLEN;
RX   MEDLINE; 93094476.
RA   Breiteneder H., Ferreira F., Reikerstorfer A., Duchene M.,
RA   Valenta R., Hoffmann-Sommergruber K., Ebner C., Breitenbach M.,
RA   Kraft D., Scheiner O.;
RT   "Complementary DNA cloning and expression in Escherichia coli of Aln
RT   g I, the major allergen in pollen of alder (Alnus glutinosa).";
RL   J. Allergy Clin. Immunol. 90:909-917(1992).
CC   -!- DISEASE: A CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC       AMERICA AND USSR.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
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CC   ----------------------------------------------------------------------
DR   EMBL; S50892; AAB24432.1; -.
DR   HSSP; P15494; 1BTV.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
KW   Allergen; Pathogenesis-related protein.
FT   INIT_MET      0      0       BY SIMILARITY.
SQ   SEQUENCE   159 AA;  17207 MW;  8DCFB96C680688A6 CRC64;


  Query Match             83.4%;  Score 683;  DB 1;  Length 159;
  Best Local Similarity   81.1%;  Pred. No. 3.8e-52;
  Matches  129;  Conservative   12;  Mismatches   18;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
           |||||| || |||||||||||||||| | |||||:|:|||||||||||||||||:|||
Db       1 GVFNYEAETPSVIPAARLFKAFILDGDKLLPKVAPEAVSSVENIEGNGGPGTIKKITFPE 60

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | |||||:|||||  ||||::|||||| :|| |||: ||||||| ||||||||||:
Db      61 GSPFKYVKERVDEVDRVNFKYSFSVIEGGAVGDALEKVCNEIKIVAAPDGGSILKISNKF 120

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           |||||||: |||:|  ||    ||:|||||||||||||
Db     121 HTKGDHEINAEQIKIEKEKAVGLLKAVESYLLAHSDAYN 159


RESULT  13
MPA2_CARBE
ID   MPA2_CARBE     STANDARD;      PRT;   159 AA.
AC   P38950;
DT   01-FEB-1995 (Rel. 31, Created)
DT   01-FEB-1995 (Rel. 31, Last sequence update)
DT   01-NOV-1997 (Rel. 35, Last annotation update)
DE   MAJOR POLLEN ALLERGEN CAR B 1, ISOFORM 2 (CAR B I).
OS   Carpinus betulus (Hornbeam).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC   Fagales; Betulaceae; Carpinus.
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=POLLEN;
RX   MEDLINE; 92293162.
RA   Nedergaard Larsen J., Stroeman P., Ipsen H.;
RT   "PCR based cloning and sequencing of isogenes encoding the tree
RT   pollen major allergen Car b I from Carpinus betulus, hornbeam.";
RL   Mol. Immunol. 29:703-711(1992).
CC   -!- DISEASE: A CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC       AMERICA AND USSR.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
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CC   ----------------------------------------------------------------------
DR   EMBL; X66933; CAA47367.1; -.
DR   HSSP; P15494; 1BTV.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
KW   Allergen; Pathogenesis-related protein; Multigene family.
FT   INIT_MET      0      0       BY SIMILARITY.
SQ   SEQUENCE   159 AA;  17356 MW;  7D55C78195C1C551 CRC64;


  Query Match             78.1%;  Score 640;  DB 1;  Length 159;
  Best Local Similarity   75.5%;  Pred. No. 1.9e-48;
  Matches  120;  Conservative   20;  Mismatches   19;  Indels    0;  Gaps   -0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
           |||||| |||||||||||||||||: | |||:|||:|||||:|||||||||||:| |
Db       1 GVFNYEAETTSVIPAARLFKAFILDGNKLIPKVSPQAVSSVENVEGNGGPGTIKKITFSE 60

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | | ||||:||:|:|||||||||:|||| :|| |||:|:|:|||| | ||||:|||:|:
Db      61 GSPVKYVKERVEEIDHTNFKYNYTVIEGDVLGDKLEKVSHELKIVAAPGGGSIVKISSKF 120

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           | || ||| ||::| :||| | ||||||||||||:  ||
Db     121 HAKGYHEVNAEEMKGAKEMAEKLLRAVESYLLAHTAEYN 159


RESULT  14
MPA1_CARBE
ID   MPA1_CARBE     STANDARD;      PRT;   159 AA.
AC   P38949;
DT   01-FEB-1995 (Rel. 31, Created)
DT   01-FEB-1995 (Rel. 31, Last sequence update)
DT   01-NOV-1997 (Rel. 35, Last annotation update)
DE   MAJOR POLLEN ALLERGEN CAR B 1, ISOFORMS 1A AND 1B (CAR B I).
OS   Carpinus betulus (Hornbeam).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC   Fagales; Betulaceae; Carpinus.
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=POLLEN;
RX   MEDLINE; 92293162.
RA   Nedergaard Larsen J., Stroeman P., Ipsen H.;
RT   "PCR based cloning and sequencing of isogenes encoding the tree
RT   pollen major allergen Car b I from Carpinus betulus, hornbeam.";
RL   Mol. Immunol. 29:703-711(1992).
CC   -!- DISEASE: A CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC       AMERICA AND USSR.
CC   -!- MISCELLANEOUS: THE SEQUENCE SHOWN IS THAT OF ISOFORM 1A.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
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CC   ----------------------------------------------------------------------
DR   EMBL; X66932; CAA47366.1; -.
DR   EMBL; X66918; CAA47357.1; -.
DR   HSSP; P15494; 1BTV.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
KW   Allergen; Pathogenesis-related protein; Multigene family.
FT   INIT_MET      0      0       BY SIMILARITY.
FT   VARIANT      37     37       V -> A (IN ISOFORM 1B).
FT   VARIANT      62     62       I -> S (IN ISOFORM 1B).
FT   VARIANT     132    132       K -> E (IN ISOFORM 1B).
SQ   SEQUENCE   159 AA;  17271 MW;  21DCD17A38851E8E CRC64;


  Query Match             75.6%;  Score 619;  DB 1;  Length 159;
  Best Local Similarity   73.0%;  Pred. No. 1.2e-46;
  Matches  116;  Conservative   21;  Mismatches   22;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
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          |||||| || ||||||||||:::|||| | |||||| ||||||: ||||||||| |:| |
Db      1 GVFNYEAETPSVIPAARLFKSYVLDGDKLIPKVAPQVISSVENVGGNGGPGTIKNITFAE 60

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          |:|||:||:|||||| |||||:|||| :|| |||:|:|:|||| | ||||:|||:|:
Db     61 GIPFKFVKERVDEVDNANFKYNYTVIEGDVLGDKLEKVSHELKIVAAPGGGSIVKISSKF 120

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
             | || ||| ||::| :||| | ||||||||||||:  ||
Db    121 HAKGYHEVNAEKMKGAKEMAEKLLRAVESYLLAHTAEYN 159


RESULT  15
MPAA_CORAV
ID   MPAA_CORAV     STANDARD;      PRT;   159 AA.
AC   Q08407;
DT   01-OCT-1994 (Rel. 30, Created)
DT   01-FEB-1995 (Rel. 31, Last sequence update)
DT   01-NOV-1997 (Rel. 35, Last annotation update)
DE   MAJOR POLLEN ALLERGEN COR A 1, ISOFORMS 5, 6, 11 AND 16 (COR A I).
OS   Corylus avellana (European hazel).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC   Fagales; Betulaceae; Corylus.
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=POLLEN;
RX   MEDLINE; 93185652.
RA   Breiteneder H., Ferreira F., Hoffmann-Sommergruber K., Ebner C.,
RA   Breitenbach M., Rumpold H., Kraft D., Scheiner O.;
RT   "Four recombinant isoforms of Cor a I, the major allergen of hazel
RT   pollen, show different IgE-binding properties.";
RL   Eur. J. Biochem. 212:355-362(1993).
CC   -!- DISEASE: A CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC       AMERICA AND USSR. THE COR A I ISOFORMS DISPLAY DIFFERENT ANTIGENIC
CC       AND ALLERGENIC PROPERTIES.
CC   -!- MISCELLANEOUS: THE SEQUENCE SHOWN IS THAT OF CLONE COR A I/5.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
CC   ----------------------------------------------------------------------
CC   This SWISS-PROT entry is copyright. It is produced through a collaboration
CC   between the Swiss Institute of Bioinformatics and the EMBL outstation -
CC   the European Bioinformatics Institute. There are no restrictions on its
CC   use by non-profit institutions as long as its content is in no way
CC   modified and this statement is not removed. Usage by and for commercial
CC   entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC   or send an email to license@isb-sib.ch).
CC   ----------------------------------------------------------------------
DR   EMBL; X70999; CAA50327.1; -.
DR   EMBL; X71000; CAA50328.1; -.
DR   EMBL; X70997; CAA50325.1; -.
DR   EMBL; X70998; CAA50326.1; -.
DR   PIR; S30053; S30053.
DR   HSSP; P15494; 1BTV.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
KW   Allergen; Pathogenesis-related protein; Multigene family.
FT   INIT_MET      0      0
FT   VARIANT       7      7       V -> A (IN CLONE COR A 1/11).
FT   VARIANT      10     10       P -> T (IN CLONE COR A 1/11).
FT   VARIANT      14     14       P -> S (IN CLONE COR A 1/16).
FT   VARIANT      45     45       E -> G (IN CLONE COR A 1/16).
FT   VARIANT      80     80       T -> K (IN CLONE COR A 1/6 AND 1/16).
FT   VARIANT     100    100       H -> S (IN CLONE COR A 1/6 AND 1/16).
FT   VARIANT     113    113       I -> T (IN CLONE COR A 1/16).
FT   VARIANT     133    133       M -> I (IN CLONE COR A 1/11).
SQ   SEQUENCE   159 AA;  17381 MW;  E0F5E2A218E8D768 CRC64;


 Query Match            75.1%;  Score 615;  DB 1;  Length 159;
 Best Local Similarity  72.3%;  Pred. No. 2.6e-46;
  Matches  115;  Conservative   22;  Mismatches   22;  Indels    0;  Gaps    0;

Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
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Db      1 GVFNYEVETPSVIPAARLFKSYVLDGDKLIPKVAPQAITSVENVEGNGGPGTIKNITFGE 60

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          |  :||||:|||||:||| |:|:|||| :|| |||: :|:|||| | ||||||||:|:
Db     61 GSRYKYVKERVDEVDNTNFTYSYTVIEGDVLGDKLEKVCHELKIVAAPGGGSILKISSKF 120

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
             | |||||: |||:| :||| | ||||||:|||||| ||
Db    121 HAKGDHEINAEEMKGAKEMAEKLLRAVETYLLAHSAEYN 159


Search completed: December 11, 2000, 10:36:31
Job time: 2959 sec
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GenCore version 4.5


OM nucleic - nucleic search, using sw model

Run on: December 11, 2000, 10:23:53 ; Search time 993.56 Seconds
(without alignments)
2110.027 Million cell updates/sec

Title: US-09-270-910-36
Perfect score: 480
Sequence: 1 ggtgtgtttaattatgagac.....actccgatgcctacaactaa 480

Scoring table: IDENTITY_NUC
Gapop 10.0 , Gapext 1.0

Searched: 1033670 seqs, 2183789903 residues

Total number of hits satisfying chosen parameters: 2067340

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : GenEmbl:*
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2: gb_ba2:*
3: gb_om:*
4: gb_ov:*
5: gb_pat:*
6: gb_ph:*
7: gb_pl1:*
8: gb_pl2:*
9: gb_pr1:*
10: gb_pr2:*
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32: em_ba2:*
33: em_hum3:*
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35: gb_pr4:*
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72: em_htg14:*
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92: gb_un:*
93: gb_vi1:*
94: gb_vi2:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

| Result No. | Score | % Query Match | Length | DB | ID | Description |
|---|---|---|---|---|---|---|
| 1 | 480 | 100.0 | 483 | 8 | BVZ80104 | Z80104 B.verrucosa |
| 2 | 473.6 | 98.7 | 483 | 8 | BVZ80106 | Z80106 B.verrucosa |
| 3 | 470.4 | 98.0 | 672 | 5 | I77098 | I77098 Sequence 21 |
| 4 | 470.4 | 98.0 | 691 | 8 | BVBETV1 | X15877 Birch mRNA |
| 5 | 468.8 | 97.7 | 483 | 8 | BVAJ2107 | AJ002107 Betula ve |
| 6 | 468.8 | 97.7 | 483 | 8 | BVGC11 | Z72429 B.verrucosa |
| 7 | 468.8 | 97.7 | 483 | 8 | BVGC31 | Z72432 B.verrucosa |
| 8 | 468.8 | 97.7 | 483 | 8 | BVZ80098 | Z80098 B.verrucosa |
| 9 | 467.4 | 97.4 | 480 | 5 | I77099 | I77099 Sequence 22 |
| 10 | 467.2 | 97.3 | 483 | 8 | BVAJ2108 | AJ002108 Betula ve |
| 11 | 467.2 | 97.3 | 483 | 8 | BVZ80099 | Z80099 B.verrucosa |
| 12 | 465.6 | 97.0 | 483 | 8 | BVAJ2109 | AJ002109 Betula ve |

| | | | | | | |
|---|---|---|---|---|---|---|
| 13 | 465.6 | 97.0 | 483 | 8 | BVE6906 | AJ006906 Betula ve |
| 14 | 465.6 | 97.0 | 483 | 8 | BVZ80105 | Z80105 B.verrucosa |
| 15 | 462.4 | 96.3 | 483 | 8 | BVZ80101 | Z80101 B.verrucosa |
| 16 | 462.4 | 96.3 | 483 | 8 | BVZ80103 | Z80103 B.verrucosa |
| 17 | 460.8 | 96.0 | 483 | 8 | BVE6904 | AJ006904 Betula ve |
| 18 | 460.8 | 96.0 | 483 | 8 | BVE6911 | AJ006911 Betula ve |
| 19 | 460.8 | 96.0 | 483 | 8 | BVZ80102 | Z80102 B.verrucosa |
| 20 | 459.2 | 95.7 | 483 | 7 | AF124838 | AF124838 Betula pe |
| 21 | 459.2 | 95.7 | 483 | 8 | BVE6910 | AJ006910 Betula ve |
| 22 | 457.6 | 95.3 | 483 | 8 | BVE6908 | AJ006908 Betula ve |
| 23 | 454.4 | 94.7 | 483 | 8 | BVE6907 | AJ006907 Betula ve |
| 24 | 452.8 | 94.3 | 483 | 8 | BVE6903 | AJ006903 Betula ve |
| 25 | 452.8 | 94.3 | 483 | 8 | BVZ80100 | Z80100 B.verrucosa |
| 26 | 451.8 | 94.1 | 490 | 8 | BVE6905 | AJ006905 Betula ve |
| 27 | 450.2 | 93.8 | 490 | 8 | BVE6913 | AJ006913 Betula ve |
| 28 | 449.6 | 93.7 | 483 | 8 | BVAJ2110 | AJ002110 Betula ve |
| 29 | 448 | 93.3 | 483 | 7 | AF124837 | AF124837 Betula pe |
| 30 | 448 | 93.3 | 677 | 8 | BVBETV1D | X77266 B.verrucosa |
| 31 | 446.4 | 93.0 | 483 | 8 | BVAJ2106 | AJ002106 Betula ve |
| 32 | 446.4 | 93.0 | 483 | 8 | BVE6914 | AJ006914 Betula ve |
| 33 | 444.8 | 92.7 | 483 | 8 | BVE6909 | AJ006909 Betula ve |
| 34 | 441.6 | 92.0 | 571 | 8 | BVBETV1L | X77273 B.verrucosa |
| 35 | 441.6 | 92.0 | 677 | 8 | BVBETV1H | X77270 B.verrucosa |
| 36 | 438.4 | 91.3 | 483 | 8 | BVE6915 | AJ006915 Betula ve |
| 37 | 438.4 | 91.3 | 701 | 8 | BVBETV1G | X77269 B.verrucosa |
| 38 | 435.2 | 90.7 | 572 | 8 | BVBETV1J | X77271 B.verrucosa |
| 39 | 433.6 | 90.3 | 572 | 8 | BVBETV1F | X77268 B.verrucosa |
| 40 | 433.6 | 90.3 | 572 | 8 | BVBETV1I | X77274 B.verrucosa |
| 41 | 432 | 90.0 | 572 | 8 | BVBETV1E | X77267 B.verrucosa |
| 42 | 425.6 | 88.7 | 483 | 8 | BVE6912 | AJ006912 Betula ve |
| 43 | 424 | 88.3 | 483 | 7 | AF124839 | AF124839 Betula pe |
| 44 | 417.6 | 87.0 | 687 | 8 | BVBETV1M | X81972 B.verrucosa |
| 45 | 417.6 | 87.0 | 714 | 8 | BVBETV1B | X77200 B.verrucosa |

ALIGNMENTS

```
RESULT   1
BVZ80104
LOCUS       BVZ80104      483 bp    mRNA            PLN       12-SEP-1996
DEFINITION  B.verrucosa mRNA for pollen allergen Betv1 (clone 2227).
ACCESSION   Z80104
VERSION     Z80104.1  GI:1542868
KEYWORDS    Betv1; pollen allergen.
SOURCE      European white birch.
  ORGANISM  Betula pendula
            Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
            euphyllophytes; Spermatophyta; Magnoliophyta; eudicotyledons;
            Rosidae; Fagales; Betulaceae; Betula.
REFERENCE   1  (bases 1 to 483)
  AUTHORS   Larsen,J.N.
  TITLE     PCR based cloning and sequencing of isogenes encoding the tree
            pollen major allergen Bet v 1 from Betula verrucosa, white birch
  JOURNAL   Unpublished
REFERENCE   2  (bases 1 to 483)
  AUTHORS   Larsen,J.N.
  TITLE     Direct Submission
  JOURNAL   Submitted (06-SEP-1996) Larsen J.N., ALK A/S, ALK Research, Boge
            Alle 10-12, Horsholm, DK-2970, Denmark
FEATURES             Location/Qualifiers
     source          1. .483
                     /organism="Betula pendula"
                     /db_xref="taxon:3505"
                     /tissue_type="pollen obtained from Allergon, Sweden"
                     /clone="2227"
                     /note="obtained by PCR using cDNA as template"
     CDS             1. .483
                     /codon_start=1
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                     /db_xref="GI:1542869"
                     /db_xref="SWISS-PROT:P15494"
                     /translation="MGVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVEN
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BASE COUNT      148 a    110 c    122 g    103 t
ORIGIN
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1026

Query Match 100.0%; Score 480; DB 8; Length 483;
Best Local Similarity 100.0%; Pred. No. 2.1e-126;
Matches 480; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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Db       4 GGTGTGTTTAATTATGAGACTGAGACCACCTCTGTTATCCCAGCAGCTCGACTGTTCAAG 63

Qy      61 gcctttatccttgatggcgataacctctttccaaaggttgcaccccaagccattagcagt 120
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      64 GCCTTTATCCTTGATGGCGATAACCTCTTTCCAAAGGTTGCACCCCAAGCCATTAGCAGT 123

Qy     121 gttgaaaacattgaaggaaatggagggcctggaaccattaagaagatcagctttcccgaa 180
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Db     124 GTTGAAAACATTGAAGGAAATGGAGGGCCTGGAACCATTAAGAAGATCAGCTTTCCCGAA 183

Qy     181 ggcctccctttcaagtacgtgaaggacagagttgatgaggtggaccacacaaacttcaaa 240
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Qy     241 tacaattacagcgtgatcgagggcggtcccataggcgacacattggagaagatctccaac 300
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Db     244 TACAATTACAGCGTGATCGAGGGCGGTCCCATAGGCGACACATTGGAGAAGATCTCCAAC 303

Qy     301 gagataaagatagtggcaacccctgatggaggatccatcttgaagatcagcaacaagtac 360
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Db     304 GAGATAAAGATAGTGGCAACCCCTGATGGAGGATCCATCTTGAAGATCAGCAACAAGTAC 363

Qy     361 cacaccaaaggtgaccatgaggtgaaggcagagcaggttaaggcaagtaaagaaatgggc 420
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
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Qy     421 gagacacttttgagggccgttgagagctacctcttggcacactccgatgcctacaactaa 480
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Db     424 GAGACACTTTTGAGGGCCGTTGAGAGCTACCTCTTGGCACACTCCGATGCCTACAACTAA 483
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RESULT   2
BVZ80106
LOCUS       BVZ80106      483 bp    mRNA            PLN       12-SEP-1996
DEFINITION  B.verrucosa mRNA for pollen allergen Betv1 (clone 2301).
ACCESSION   Z80106
VERSION     Z80106.1  GI:1542872
KEYWORDS    Betv1; pollen allergen.
SOURCE      European white birch.
  ORGANISM  Betula pendula
            Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
            euphyllophytes; Spermatophyta; Magnoliophyta; eudicotyledons;
            Rosidae; Fagales; Betulaceae; Betula.
REFERENCE   1  (bases 1 to 483)
  AUTHORS   Larsen,J.N.
  TITLE     PCR based cloning and sequencing of isogenes encoding the tree
            pollen major allergen Bet v 1 from Betula verrucosa, white birch
  JOURNAL   Unpublished
REFERENCE   2  (bases 1 to 483)
  AUTHORS   Larsen,J.N.
  TITLE     Direct Submission
  JOURNAL   Submitted (06-SEP-1996) Larsen J.N., ALK A/S, ALK Research, Boge
            Alle 10-12, Horsholm, DK-2970, Denmark
FEATURES             Location/Qualifiers
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                     /clone="2301"
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                "
BASE COUNT      149 a    109 c    120 g    105 t
ORIGIN


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  Best Local Similarity   99.2%;  Pred. No. 1.4e-124;
  Matches  476;  Conservative    0;  Mismatches    4;  Indels    0;  Gaps    0;

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Qy      61 gcctttatccttgatggcgataacctctttccaaaggttgcaccccaagccattagcagt 120
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Qy     121 gttgaaaacattgaaggaaatggagggcctggaaccattaagaagatcagctttcccgaa 180
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Db     124 GTTGAAAACATTGAAGGAAATGGAGGGCCTGGAACCATTAAGAAGATCAGCTTTCCCGAA 183

Qy     181 ggcctccctttcaagtacgtgaaggacagagttgatgaggtggaccacacaaacttcaaa 240
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Qy     361 cacaccaaaggtgaccatgaggtgaaggcagagcaggttaaggcaagtaaagaaatgggc 420
           |||||||||||||||||||||||||||||||||||||||||||||||||||||||||| ||
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Db     424 GAGACACTTTTGAGGGCCGTTGAGAGCTACCTCTTGGCACACTCCGATGCCTACAACTAA 483


RESULT   3
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LOCUS       I77098        672 bp    DNA             PAT       03-APR-1998
DEFINITION  Sequence 21 from patent US 5693495.
ACCESSION   I77098
VERSION     I77098.1  GI:3013252
KEYWORDS    .
SOURCE      Unknown.
  ORGANISM  Unknown.
            Unclassified.
REFERENCE   1  (bases 1 to 672)
  AUTHORS   Breiteneder,H., Valenta,R., Breitenbach,M., Kraft,D., Rumpold,H.
            and Scheiner,O.
  TITLE     Allergens of alder pollen and applications thereof
  JOURNAL   Patent: US 5693495-A 21 02-DEC-1997;
FEATURES             Location/Qualifiers
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BASE COUNT      218 a    130 c    158 g    166 t
ORIGIN


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  Matches  474;  Conservative    0;  Mismatches    6;  Indels    0;  Gaps    0;

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Qy      61 gcctttatccttgatggcgataacctctttccaaaggttgcaccccaagccattagcagt 120
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Qy     121 gttgaaaacattgaaggaaatggagggcctggaaccattaagaagatcagctttcccgaa 180
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     124 GTTGAAAACATTGAAGGAAATGGAGGGCCTGGAACCATTAAGAAGATCAGCTTTCCCGAA 183

Qy     181 ggcctccctttcaagtacgtgaaggacagagttgatgaggtggaccacacaaacttcaaa 240
           ||| ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     184 GGCTTCCCTTTCAAGTACGTGAAGGACAGAGTTGATGAGGTGGACCACACAAACTTCAAA 243

Qy     241 tacaattacagcgtgatcgagggcggtcccataggcgacacattggagaagatctccaac 300
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     244 TACAATTACAGCGTGATCGAGGGCGGTCCCATAGGCGACACATTGGAGAAGATCTCCAAC 303

Qy     301 gagataaagatagtggcaacccctgatggaggatccatcttgaagatcagcaacaagtac 360
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Db     304 GAGATAAAGATAGTGGCAACCCCTGATGGAGGATCCATCTTGAAGATCAGCAACAAGTAC 363

Qy     361 cacaccaaaggtgaccatgaggtgaaggcagagcaggttaaggcaagtaaagaaatgggc 420
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     364 CACACCAAAGGTGACCATGAGGTGAAGGCAGAGCAGGTTAAGGCAAGTAAAGAAATGGGC 423

Qy     421 gagacacttttgagggccgttgagagctacctcttggcacactccgatgcctacaactaa 480
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     424 GAGACACTTTTGAGGGCCGTTGAGAGCTACCTCTTGGCACACTCCGATGCCTACAACTAA 483


RESULT   4
BVBETV1
LOCUS       BVBETV1       691 bp    mRNA            PLN       12-SEP-1993
DEFINITION  Birch mRNA for pollen allergen BetvI.
ACCESSION   X15877
VERSION     X15877.1  GI:17937
KEYWORDS    allergen; BetvI gene; pollen allergen.
SOURCE      European white birch.
  ORGANISM  Betula pendula
            Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
            euphyllophytes; Spermatophyta; Magnoliophyta; eudicotyledons;
            Rosidae; Fagales; Betulaceae; Betula.
REFERENCE   1  (bases 1 to 691)
  AUTHORS   Breiteneder,H., Pettenburger,K., Bito,A., Valenta,R., Kraft,D.,
            Rumpold,H., Scheiner,O. and Breitenbach,M.
  TITLE     The gene coding for the major birch pollen allergen Betv1, is
            highly homologous to a pea disease resistance response gene
  JOURNAL   EMBO J. 8 (7), 1935-1938 (1989)
  MEDLINE   90005395
COMMENT     Data kindly reviewed (01-MAY-1990) by Breitenbach M.
FEATURES             Location/Qualifiers
     source          1. .691
                     /organism="Betula pendula"
                     /db_xref="taxon:3505"
                     /tissue_type="pollen"
                     /clone_lib="lambda gt11"
     CDS             49. .531
                     /note="BetvI allergen (AA 1-160)"
                     /codon_start=1
                     /protein_id="CAA33887.1"
                     /db_xref="GI:17938"
                     /db_xref="SWISS-PROT:P15494"
                     /translation="MGVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVEN
                     IEGNGGPGTIKKISFPEGFPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNE
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     misc_feature    677. .682
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     polyA_site      691
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BASE COUNT      204 a    143 c    161 g    183 t
ORIGIN


  Query Match             98.0%;  Score 470.4;  DB 8;  Length 691;
  Best Local Similarity   98.8%;  Pred. No. 1.2e-123;
  Matches  474;  Conservative    0;  Mismatches    6;  Indels    0;  Gaps    0;

Qy       1 ggtgtgtttaattatgagactgagaccacctctgttatcccagcagctcgactgttcaag 60
           ||||| || |||||| || ||||||||||||||||||||||||||||||||||||||||||
Db      52 GGTGTTTTCAATTACGAAACTGAGACCACCTCTGTTATCCCAGCAGCTCGACTGTTCAAG 111

Qy      61 gcctttatccttgatggcgataacctctttccaaaggttgcaccccaagccattagcagt 120
           |||||||||||||||||||||| ||||||||||||||||||||||||||||||||||||
Db     112 GCCTTTATCCTTGATGGCGATAATCTCTTTCCAAAGGTTGCACCCCAAGCCATTAGCAGT 171

Qy     121 gttgaaaacattgaaggaaatggagggcctggaaccattaagaagatcagctttcccgaa 180
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     172 GTTGAAAACATTGAAGGAAATGGAGGGCCTGGAACCATTAAGAAGATCAGCTTTCCCGAA 231

Qy     181 ggcctccctttcaagtacgtgaaggacagagttgatgaggtggaccacacaaacttcaaa 240
           ||| ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     232 GGCTTCCCTTTCAAGTACGTGAAGGACAGAGTTGATGAGGTGGACCACACAAACTTCAAA 291

Qy     241 tacaattacagcgtgatcgagggcggtcccataggcgacacattggagaagatctccaac 300
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     292 TACAATTACAGCGTGATCGAGGGCGGTCCCATAGGCGACACATTGGAGAAGATCTCCAAC 351

Qy     301 gagataaagatagtggcaacccctgatggaggatccatcttgaagatcagcaacaagtac 360
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Db     352 GAGATAAAGATAGTGGCAACCCCTGATGGAGGATCCATCTTGAAGATCAGCAACAAGTAC 411

Qy     361 cacaccaaaggtgaccatgaggtgaaggcagagcaggttaaggcaagtaaagaaatgggc 420
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     412 CACACCAAAGGTGACCATGAGGTGAAGGCAGAGCAGGTTAAGGCAAGTAAAGAAATGGGC 471

Qy     421 gagacacttttgagggccgttgagagctacctcttggcacactccgatgcctacaactaa 480
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     472 GAGACACTTTTGAGGGCCGTTGAGAGCTACCTCTTGGCACACTCCGATGCCTACAACTAA 531


RESULT   5
BVAJ2107
LOCUS       BVAJ2107      483 bp    mRNA            PLN       07-JAN-2000
DEFINITION  Betula verrucosa mRNA for major pollen allergen Bet v 1 (Bet v 1
            at12).
ACCESSION   AJ002107
VERSION     AJ002107.1  GI:2564221
KEYWORDS    Betv1 gene; pollen allergen.
SOURCE      European white birch.
  ORGANISM  Betula pendula
            Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
            euphyllophytes; Spermatophyta; Magnoliophyta; eudicotyledons; core
            eudicots; Rosidae; eurosids I; Fagales; Betulaceae; Betula.
REFERENCE   1  (bases 1 to 483)
  AUTHORS   Friedl-Hajek,R., Radauer,C., O'Riordain,G.,
            Hoffmann-Sommergruber,K., Leberl,K., Scheiner,O. and Breiteneder,H.
  TITLE     New Bet v 1 isoforms including a naturally occurring truncated form
            of the protein derived from Austrian birch pollen
  JOURNAL   Mol. Immunol. 36 (10), 639-645 (1999)
  MEDLINE   99437514
REFERENCE   2  (bases 1 to 483)
  AUTHORS   Friedl-Hajek,R.
  TITLE     Direct Submission
  JOURNAL   Submitted (17-OCT-1997) Friedl-Hajek R., Institute of General and
            Experimental Pathology, University of Vienna, Waehringer Guertel
            18-20, A-1090 Vienna, AUSTRIA
FEATURES             Location/Qualifiers
     source          1. .483
                     /organism="Betula pendula"
                     /db_xref="taxon:3505"
                     /clone="at12"
                     /tissue_type="pollen"
                     /dev_stage="mature"
     gene            1. .483
                     /gene="Betv1"
     CDS             1. .483
                     /gene="Betv1"
                     /note="isoform at12"
                     /codon_start=1
                     /product="pollen allergen Betv1"
                     /protein_id="CAA05187.1"
                     /db_xref="GI:2564222"
                     /db_xref="SPTREMBL:O24642"
                     /translation="MGVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVEN
                     IEGNGGPGTIKKISFPEGFPFKYVKDRVDEVDHTNFKYNYSVIEGGPMGDTLEKISNE
                     IKIVATPDGGSILKISNKYHTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN
                     "
BASE COUNT      148 a    110 c    121 g    104 t
ORIGIN


  Query Match             97.7%;  Score 468.8;  DB 8;  Length 483;
  Best Local Similarity   98.5%;  Pred. No. 3.3e-123;
  Matches  473;  Conservative    0;  Mismatches    7;  Indels    0;  Gaps    0;

Qy       1 ggtgtgtttaattatgagactgagaccacctctgttatcccagcagctcgactgttcaag 60
           ||||| || |||||| || ||||||||||||||||||||||||||||||||||||||||||
Db       4 GGTGTTTTCAATTACGAAACTGAGACCACCTCTGTTATCCCAGCAGCTCGACTGTTCAAG 63

Qy      61 gcctttatccttgatggcgataacctctttccaaaggttgcaccccaagccattagcagt 120
           |||||||||||||||||||||| ||||||||||||||||||||||||||||||||||||
Db      64 GCCTTTATCCTTGATGGCGATAATCTCTTTCCAAAGGTTGCACCCCAAGCCATTAGCAGT 123

Qy     121 gttgaaaacattgaaggaaatggagggcctggaaccattaagaagatcagctttcccgaa 180
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     124 GTTGAAAACATTGAAGGAAATGGAGGGCCTGGAACCATTAAGAAGATCAGCTTTCCCGAA 183

Qy     181 ggcctccctttcaagtacgtgaaggacagagttgatgaggtggaccacacaaacttcaaa 240
           ||| ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     184 GGCTTCCCTTTCAAGTACGTGAAGGACAGAGTTGATGAGGTGGACCACACAAACTTCAAA 243

Qy     241 tacaattacagcgtgatcgagggcggtcccataggcgacacattggagaagatctccaac 300
           ||||||||||||||||||||||||||||||||| |||||||||||||||||||||||||
Db     244 TACAATTACAGCGTGATCGAGGGCGGTCCCATGGGCGACACATTGGAGAAGATCTCCAAC 303

Qy     301 gagataaagatagtggcaacccctgatggaggatccatcttgaagatcagcaacaagtac 360
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Db     304 GAGATAAAGATAGTGGCAACCCCTGATGGAGGATCCATCTTGAAGATCAGCAACAAGTAC 363

Qy     361 cacaccaaaggtgaccatgaggtgaaggcagagcaggttaaggcaagtaaagaaatgggc 420
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     364 CACACCAAAGGTGACCATGAGGTGAAGGCAGAGCAGGTTAAGGCAAGTAAAGAAATGGGC 423

Qy     421 gagacacttttgagggccgttgagagctacctcttggcacactccgatgcctacaactaa 480
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     424 GAGACACTTTTGAGGGCCGTTGAGAGCTACCTCTTGGCACACTCCGATGCCTACAACTAA 483


RESULT   6
BVGC11
LOCUS       BVGC11        483 bp    DNA             PLN       08-MAY-1998
DEFINITION  B.verrucosa gene for major allergen Bet v 1 (clone BVGC11).
ACCESSION   Z72429
VERSION     Z72429.1  GI:1321711
KEYWORDS    major allergen.
SOURCE      European white birch.
  ORGANISM  Betula pendula
            Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
            euphyllophytes; Spermatophyta; Magnoliophyta; eudicotyledons;
            Rosidae; Fagales; Betulaceae; Betula.
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REFERENCE   1  (bases 1 to 483)
  AUTHORS   Hoffmann-Sommergruber,K.
  TITLE     Direct Submission
  JOURNAL   Submitted (29-APR-1996) Hoffmann-Sommergruber K., University of
            Vienna, Vienna, Austria, Gen. & Exp. Pathology, Waehringer Guertel
            18-20, Vienna, Austria, A-1090
REFERENCE   2  (bases 1 to 483)
  AUTHORS   Hoffmann-Sommergruber,K., Vanek-Krebitz,M., Radauer,C., Wen,J.,
            Ferreira,F., Scheiner,O. and Breiteneder,H.
  TITLE     Genomic characterization of members of the Bet v 1 family: genes
            coding for allergens and pathogenesis-related proteins share intron
            positions
  JOURNAL   Gene 197 (1-2), 91-100 (1997)
  MEDLINE   97473499
FEATURES             Location/Qualifiers
     source          1. .483
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                     /db_xref="taxon:3505"
                     /clone="BVGC11"
                     /tissue_type="leaves"
     CDS             1. .483
                     /codon_start=1
                     /product="major allergen Bet v 1"
                     /protein_id="CAA96538.1"
                     /db_xref="GI:1321712"
                     /db_xref="SPTREMBL:Q42499"
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                     "
BASE COUNT      148 a    110 c    121 g    104 t
ORIGIN
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  Query Match             97.7%;  Score 468.8;  DB 8;  Length 483;
  Best Local Similarity   98.5%;  Pred. No. 3.3e-123;
  Matches  473;  Conservative    0;  Mismatches    7;  Indels    0;  Gaps    0;

Qy      1 ggtgtgtttaattatgagactgagaccacctctgttatcccagcagctcgactgttcaag 60
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Db      4 GGTGTTTTCAATTACGAAACTGAGGCCACCTCTGTTATCCCAGCAGCTCGACTGTTCAAG 63

Qy     61 gcctttatccttgatggcgataacctctttccaaaggttgcaccccaagccattagcagt 120
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Db     64 GCCTTTATCCTTGATGGCGATAATCTCTTTCCAAAGGTTGCACCCCAAGCCATTAGCAGT 123

Qy    121 gttgaaaacattgaaggaaatggagggcctggaaccattaagaagatcagctttcccgaa 180
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Db    124 GTTGAAAACATTGAAGGAAATGGAGGGCCTGGAACCATTAAGAAGATCAGCTTTCCCGAA 183

Qy    181 ggcctccctttcaagtacgtgaaggacagagttgatgaggtggaccacacaaacttcaaa 240
          ||| ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    184 GGCTTCCCTTTCAAGTACGTGAAGGACAGAGTTGATGAGGTGGACCACACAAACTTCAAA 243

Qy    241 tacaattacagcgtgatcgagggcggtcccataggcgacacattggagaagatctccaac 300
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    244 TACAATTACAGCGTGATCGAGGGCGGTCCCATAGGCGACACATTGGAGAAGATCTCCAAC 303

Qy    301 gagataaagatagtggcaacccctgatggaggatccatcttgaagatcagcaacaagtac 360
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Db    304 GAGATAAAGATAGTGGCAACCCCTGATGGAGGATCCATCTTGAAGATCAGCAACAAGTAC 363

Qy    361 cacaccaaaggtgaccatgaggtgaaggcagagcaggttaaggcaagtaaagaaatgggc 420
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Db    364 CACACCAAAGGTGACCATGAGGTGAAGGCAGAGCAGGTTAAGGCAAGTAAAGAAATGGGC 423

Qy    421 gagacactttgagggccgttgagagctacctcttggcacactccgatgcctacaactaa 480
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    424 GAGACACTTTTGAGGGCCGTTGAGAGCTACCTCTTGGCACACTCCGATGCCTACAACTAA 483
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RESULT   7
BVGC31
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LOCUS       BVGC31        483 bp    DNA             PLN       08-MAY-1998
DEFINITION  B.verrucosa gene for major allergen Bet v 1 (clone BVGC31).
ACCESSION   Z72432
VERSION     Z72432.1  GI:1321719
KEYWORDS    major allergen.
SOURCE      European white birch.
  ORGANISM  Betula pendula
            Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
            euphyllophytes; Spermatophyta; Magnoliophyta; eudicotyledons;
            Rosidae; Fagales; Betulaceae; Betula.
REFERENCE   1  (bases 1 to 483)
  AUTHORS   Hoffmann-Sommergruber,K.
  TITLE     Direct Submission
  JOURNAL   Submitted (29-APR-1996) Hoffmann-Sommergruber K., University of
            Vienna, Vienna, Austria, Gen. & Exp. Pathology, Waehringer Guertel
            18-20, Vienna, Austria, A-1090
REFERENCE   2  (bases 1 to 483)
  AUTHORS   Hoffmann-Sommergruber,K., Vanek-Krebitz,M., Radauer,C., Wen,J.,
            Ferreira,F., Scheiner,O. and Breiteneder,H.
  TITLE     Genomic characterization of members of the Bet v 1 family: genes
            coding for allergens and pathogenesis-related proteins share intron
            positions
  JOURNAL   Gene 197 (1-2), 91-100 (1997)
  MEDLINE   97473499
FEATURES             Location/Qualifiers
     source          1. .483
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                     /db_xref="taxon:3505"
                     /clone="BVGC31"
                     /tissue_type="Mature Leaves"
     CDS             1. .483
                     /codon_start=1
                     /product="major allergen Bet v 1"
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                     /db_xref="GI:1321720"
                     /db_xref="SPTREMBL:Q42499"
                     /translation="MGVFNYETEATSVIPAARLFKAFILDGDNLFPKVAPQAISSVEN
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BASE COUNT      148 a    110 c    121 g    104 t
ORIGIN
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  Query Match             97.7%;  Score 468.8;  DB 8;  Length 483;
  Best Local Similarity   98.5%;  Pred. No. 3.3e-123;
  Matches  473;  Conservative    0;  Mismatches    7;  Indels    0;  Gaps    0;

Qy      1 ggtgtgtttaattatgagactgagaccacctctgttatcccagcagctcgactgttcaag 60
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Db      4 GGTGTTTTCAATTACGAAACTGAGGCCACCTCTGTTATCCCAGCAGCTCGACTGTTCAAG 63

Qy     61 gcctttatccttgatggcgataacctctttccaaaggttgcaccccaagccattagcagt 120
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Db     64 GCCTTTATCCTTGATGGCGATAATCTCTTTCCAAAGGTTGCACCCCAAGCCATTAGCAGT 123

Qy    121 gttgaaaacattgaaggaaatggagggcctggaaccattaagaagatcagctttcccgaa 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    124 GTTGAAAACATTGAAGGAAATGGAGGGCCTGGAACCATTAAGAAGATCAGCTTTCCCGAA 183

Qy    181 ggcctccctttcaagtacgtgaaggacagagttgatgaggtggaccacacaaacttcaaa 240
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Db    184 GGCTTCCCTTTCAAGTACGTGAAGGACAGAGTTGATGAGGTGGACCACACAAACTTCAAA 243

Qy    241 tacaattacagcgtgatcgagggcggtcccataggcgacacattggagaagatctccaac 300
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Db    244 TACAATTACAGCGTGATCGAGGGCGGTCCCATAGGCGACACATTGGAGAAGATCTCCAAC 303

Qy    301 gagataaagatagtggcaacccctgatggaggatccatcttgaagatcagcaacaagtac 360
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Db    304 GAGATAAAGATAGTGGCAACCCCTGATGGAGGATCCATCTTGAAGATCAGCAACAAGTAC 363

Qy    361 cacaccaaaggtgaccatgaggtgaaggcagagcaggttaaggcaagtaaagaaatgggc 420
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Db     364 CACACCAAAGGTGACCATGAGGTGAAGGCAGAGCAGGTTAAGGCAAGTAAAGAAATGGGC 423

Qy     421 gagacacttttgagggccgttgagagctacctcttggcacactccgatgcctacaactaa 480
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Db     424 GAGACACTTTTGAGGGCCGTTGAGAGCTACCTCTTGGCACACTCCGATGCCTACAACTAA 483


RESULT   8
BVZ80098
LOCUS       BVZ80098      483 bp    mRNA            PLN       12-SEP-1996
DEFINITION  B.verrucosa mRNA for pollen allergen Betv1 (clone 224).
ACCESSION   Z80098
VERSION     Z80098.1  GI:1542856
KEYWORDS    Betv1; pollen allergen.
SOURCE      European white birch.
  ORGANISM  Betula pendula
            Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
            euphyllophytes; Spermatophyta; Magnoliophyta; eudicotyledons;
            Rosidae; Fagales; Betulaceae; Betula.
REFERENCE   1  (bases 1 to 483)
  AUTHORS   Larsen,J.N.
  TITLE     PCR based cloning and sequencing of isogenes encoding the tree
            pollen major allergen Bet v 1 from Betula verrucosa, white birch
  JOURNAL   Unpublished
REFERENCE   2  (bases 1 to 483)
  AUTHORS   Larsen,J.N.
  TITLE     Direct Submission
  JOURNAL   Submitted (06-SEP-1996) Larsen J.N., ALK A/S, ALK Research, Boge
            Alle 10-12, Horsholm, DK-2970, Denmark
FEATURES             Location/Qualifiers
     source          1. .483
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                     /db_xref="taxon:3505"
                     /tissue_type="pollen obtained from Allergon, Sweden"
                     /clone="224"
                     /note="obtained by PCR using cDNA as template"
     CDS             1. .483
                     /codon_start=1
                     /product="pollen allergen Bet v 1"
                     /protein_id="CAB02153.1"
                     /db_xref="GI:1542857"
                     /db_xref="SWISS-PROT:P15494"
                     /translation="MGVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVEN
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                     "
BASE COUNT      148 a    110 c    121 g    104 t
ORIGIN


  Query Match             97.7%;  Score 468.8;  DB 8;  Length 483;
  Best Local Similarity   98.5%;  Pred. No. 3.3e-123;
  Matches  473;  Conservative    0;  Mismatches    7;  Indels    0;  Gaps    0;

Qy       1 ggtgtgtttaattatgagactgagaccacctctgttatcccagcagctcgactgttcaag 60
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Db       4 GGTGTTTTCAATTACGAAACTGAGACCACCTCTGTTATCCCAGCGGCTCGACTGTTCAAG 63

Qy      61 gcctttatccttgatggcgataacctctttccaaaggttgcaccccaagccattagcagt 120
           |||||||||||||||||||||| ||||||||||||||||||||||||||||||||||||||
Db      64 GCCTTTATCCTTGATGGCGATAATCTCTTTCCAAAGGTTGCACCCCAAGCCATTAGCAGT 123

Qy     121 gttgaaaacattgaaggaaatggagggcctggaaccattaagaagatcagctttcccgaa 180
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Db     124 GTTGAAAACATTGAAGGAAATGGAGGGCCTGGAACCATTAAGAAGATCAGCTTTCCCGAA 183

Qy     181 ggcctccctttcaagtacgtgaaggacagagttgatgaggtggaccacacaaacttcaaa 240
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Db     184 GGCTTCCCTTTCAAGTACGTGAAGGACAGAGTTGATGAGGTGGACCACACAAACTTCAAA 243

Qy     241 tacaattacagcgtgatcgagggcggtcccataggcgacacattggagaagatctccaac 300
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Db     244 TACAATTACAGCGTGATCGAGGGCGGTCCCATAGGCGACACATTGGAGAAGATCTCCAAC 303

Qy     301 gagataaagatagtggcaacccctgatggaggatccatcttgaagatcagcaacaagtac 360
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Db     304 GAGATAAAGATAGTGGCAACCCCTGATGGAGGATCCATCTTGAAGATCAGCAACAAGTAC 363

Qy     361 cacaccaaaggtgaccatgaggtgaaggcagagcaggttaaggcaagtaaagaaatgggc 420
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Db     364 CACACCAAAGGTGACCATGAGGTGAAGGCAGAGCAGGTTAAGGCAAGTAAAGAAATGGGC 423

Qy     421 gagacacttttgagggccgttgagagctacctcttggcacactccgatgcctacaactaa 480
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Db     424 GAGACACTTTTGAGGGCCGTTGAGAGCTACCTCTTGGCACACTCCGATGCCTACAACTAA 483


RESULT   9
I77099
LOCUS       I77099        480 bp    DNA             PAT       03-APR-1998
DEFINITION  Sequence 22 from patent US 5693495.
ACCESSION   I77099
VERSION     I77099.1  GI:3013253
KEYWORDS    .
SOURCE      Unknown.
  ORGANISM  Unknown.
            Unclassified.
REFERENCE   1  (bases 1 to 480)
  AUTHORS   Breiteneder,H., Valenta,R., Breitenbach,M., Kraft,D., Rumpold,H.
            and Scheiner,O.
  TITLE     Allergens of alder pollen and applications thereof
  JOURNAL   Patent: US 5693495-A 22 02-DEC-1997;
FEATURES             Location/Qualifiers
     source          1. .480
                     /organism="unknown"
BASE COUNT      147 a    110 c    120 g    103 t
ORIGIN


  Query Match             97.4%;  Score 467.4;  DB 5;  Length 480;
  Best Local Similarity   98.7%;  Pred. No. 8.2e-123;
  Matches  471;  Conservative    0;  Mismatches    6;  Indels    0;  Gaps    0;

Qy       1 ggtgtgtttaattatgagactgagaccacctctgttatcccagcagctcgactgttcaag 60
           ||||| || ||||| || ||||||||||||||||||||||||||||||||||||||||||||
Db       4 GGTGTTTTCAATTACGAAACTGAGACCACCTCTGTTATCCCAGCAGCTCGACTGTTCAAG 63

Qy      61 gcctttatccttgatggcgataacctctttccaaaggttgcaccccaagccattagcagt 120
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Db      64 GCCTTTATCCTTGATGGCGATAATCTCTTTCCAAAGGTTGCACCCCAAGCCATTAGCAGT 123

Qy     121 gttgaaaacattgaaggaaatggagggcctggaaccattaagaagatcagctttcccgaa 180
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Db     124 GTTGAAAACATTGAAGGAAATGGAGGGCCTGGAACCATTAAGAAGATCAGCTTTCCCGAA 183

Qy     181 ggcctccctttcaagtacgtgaaggacagagttgatgaggtggaccacacaaacttcaaa 240
           ||| ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     184 GGCTTCCCTTTCAAGTACGTGAAGGACAGAGTTGATGAGGTGGACCACACAAACTTCAAA 243

Qy     241 tacaattacagcgtgatcgagggcggtcccataggcgacacattggagaagatctccaac 300
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Qy     301 gagataaagatagtggcaacccctgatggaggatccatcttgaagatcagcaacaagtac 360
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Db     304 GAGATAAAGATAGTGGCAACCCCTGATGGAGGATCCATCTTGAAGATCAGCAACAAGTAC 363

Qy     361 cacaccaaaggtgaccatgaggtgaaggcagagcaggttaaggcaagtaaagaaatgggc 420
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Db     364 CACACCAAAGGTGACCATGAGGTGAAGGCAGAGCAGGTTAAGGCAAGTAAAGAAATGGGC 423

Qy     421 gagacacttttgagggccgttgagagctacctcttggcacactccgatgcctacaac 477
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Db     424 GAGACACTTTTGAGGGCCGTTGAGAGCTACCTCTTGGCACACTCCGATGCCTACAAC 480
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RESULT  10
BVAJ2108
LOCUS       BVAJ2108      483 bp    mRNA            PLN       07-JAN-2000
DEFINITION  Betula verrucosa mRNA for major pollen allergen Bet v 1 (Bet v 1
            at15).
ACCESSION   AJ002108
VERSION     AJ002108.1  GI:2564223
KEYWORDS    Betv1 gene; pollen allergen.
SOURCE      European white birch.
  ORGANISM  Betula pendula
            Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
            euphyllophytes; Spermatophyta; Magnoliophyta; eudicotyledons; core
            eudicots; Rosidae; eurosids I; Fagales; Betulaceae; Betula.
REFERENCE   1  (bases 1 to 483)
  AUTHORS   Friedl-Hajek,R., Radauer,C., O'Riordain,G.,
            Hoffmann-Sommergruber,K., Leberl,K., Scheiner,O. and Breiteneder,H.
  TITLE     New Bet v 1 isoforms including a naturally occurring truncated form
            of the protein derived from Austrian birch pollen
  JOURNAL   Mol. Immunol. 36 (10), 639-645 (1999)
  MEDLINE   99437514
REFERENCE   2  (bases 1 to 483)
  AUTHORS   Friedl-Hajek,R.
  TITLE     Direct Submission
  JOURNAL   Submitted (17-OCT-1997) Friedl-Hajek R., Institute of General and
            Experimental Pathology, University of Vienna, Waehringer Guertel
            18-20, A-1090 Vienna, AUSTRIA
FEATURES             Location/Qualifiers
     source          1. .483
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                     /clone="at15"
                     /tissue_type="pollen"
                     /dev_stage="mature"
     gene            1. .483
                     /gene="Betv1"
     CDS             1. .483
                     /gene="Betv1"
                     /note="isoform at15"
                     /codon_start=1
                     /product="pollen allergen Betv1"
                     /protein_id="CAA05188.1"
                     /db_xref="GI:2564224"
                     /db_xref="SPTREMBL:O23752"
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                     IEGNGGPGTIKKISFPEGFPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNE
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BASE COUNT      148 a    110 c    122 g    103 t
ORIGIN
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  Query Match             97.3%;  Score 467.2;  DB 8;  Length 483;
  Best Local Similarity   98.3%;  Pred. No. 9.3e-123;
  Matches  472;  Conservative    0;  Mismatches    8;  Indels    0;  Gaps    0;

Qy       1 ggtgtgtttaattatgagactgagaccacctctgttatcccagcagctcgactgttcaag 60
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Db       4 GGTGTTTTCAATTACGAAACTGAGACCACCTCTGTTATCCCAGCGGCTCGACTGTTCAAG 63

Qy      61 gcctttatccttgatggcgataacctctttccaaaggttgcaccccaagccattagcagt 120
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Db      64 GCCTTTATCCTTGATGGCGATAATCTCGTTCCAAAGGTTGCACCCCAAGCCATTAGCAGT 123

Qy     121 gttgaaaacattgaaggaaatggagggcctggaaccattaagaagatcagctttcccgaa 180
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     124 GTTGAAAACATTGAAGGAAATGGAGGGCCTGGAACCATTAAGAAGATCAGCTTTCCCGAA 183

Qy     181 ggcctccctttcaagtacgtgaaggacagagttgatgaggtggaccacacaaacttcaaa 240
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Db     184 GGCTTCCCTTTCAAGTACGTGAAGGACAGAGTTGATGAGGTGGACCACACAAACTTCAAA 243

Qy     241 tacaattacagcgtgatcgagggcggtcccataggcgacacattggagaagatctccaac 300
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Db     244 TACAATTACAGCGTGATCGAGGGCGGTCCCATAGGCGACACATTGGAGAAGATCTCCAAC 303

Qy     301 gagataaagatagtggcaacccctgatggaggatccatcttgaagatcagcaacaagtac 360
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Db     304 GAGATAAAGATAGTGGCAACCCCTGATGGAGGATCCATCTTGAAGATCAGCAACAAGTAC 363

Qy     361 cacaccaaaggtgaccatgaggtgaaggcagagcaggttaaggcaagtaaagaaatgggc 420
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     364 CACACCAAAGGTGACCATGAGGTGAAGGCAGAGCAGGTTAAGGCAAGTAAAGAAATGGGC 423

Qy     421 gagacacttttgagggccgttgagagctacctcttggcacactccgatgcctacaactaa 480
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     424 GAGACACTTTTGAGGGCCGTTGAGAGCTACCTCTTGGCACACTCCGATGCCTACAACTAA 483
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RESULT  11
BVZ80099
LOCUS       BVZ80099      483 bp    mRNA            PLN       12-SEP-1996
DEFINITION  B.verrucosa mRNA for pollen allergen Betv1 (clone 2230).
ACCESSION   Z80099
VERSION     Z80099.1  GI:1542858
KEYWORDS    Betv1; pollen allergen.
SOURCE      European white birch.
  ORGANISM  Betula pendula
            Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
            euphyllophytes; Spermatophyta; Magnoliophyta; eudicotyledons;
            Rosidae; Fagales; Betulaceae; Betula.
REFERENCE   1  (bases 1 to 483)
  AUTHORS   Larsen,J.N.
  TITLE     PCR based cloning and sequencing of isogenes encoding the tree
            pollen major allergen Bet v 1 from Betula verrucosa, white birch
  JOURNAL   Unpublished
REFERENCE   2  (bases 1 to 483)
  AUTHORS   Larsen,J.N.
  TITLE     Direct Submission
  JOURNAL   Submitted (06-SEP-1996) Larsen J.N., ALK A/S, ALK Research, Boge
            Alle 10-12, Horsholm, DK-2970, Denmark
FEATURES             Location/Qualifiers
     source          1. .483
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                     /tissue_type="pollen obtained from Allergon, Sweden"
                     /clone="2230"
                     /note="obtained by PCR using cDNA as template"
     CDS             1. .483
                     /codon_start=1
                     /product="pollen allergen Bet v 1"
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                     /db_xref="SWISS-PROT:P15494"
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BASE COUNT      148 a    111 c    121 g    103 t
ORIGIN
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  Query Match             97.3%;  Score 467.2;  DB 8;  Length 483;
  Best Local Similarity   98.3%;  Pred. No. 9.3e-123;
  Matches  472;  Conservative    0;  Mismatches    8;  Indels    0;  Gaps    0;

Qy       1 ggtgtgtttaattatgagactgagaccacctctgttatcccagcagctcgactgttcaag 60
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Db       4 GGTGTTTTCAACTACGAAACTGAGACCACCTCTGTTATCCCAGCGGCTCGACTGTTCAAG 63

Qy      61 gcctttatccttgatggcgataacctctttccaaaggttgcaccccaagccattagcagt 120
           |||||||||||||||||||||| ||||||||||||||||||||||||||||||||||||
Db      64 GCCTTTATCCTTGATGGCGATAATCTCTTTCCAAAGGTTGCACCCCAAGCCATTAGCAGT 123

Qy     121 gttgaaaacattgaaggaaatggagggcctggaaccattaagaagatcagctttcccgaa 180
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Db    124 GTTGAAAACATTGAAGGAAATGGAGGGCCTGGAACCATTAAGAAGATCAGCTTTCCCGAA 183

Qy    181 ggcctccctttcaagtacgtgaaggacagagttgatgaggtggaccacacaaacttcaaa 240
          ||| ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    184 GGCTTCCCTTTCAAGTACGTGAAGGACAGAGTTGATGAGGTGGACCACACAAACTTCAAA 243

Qy    241 tacaattacagcgtgatcgagggcggtcccataggcgacacattggagaagatctccaac 300
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Db    244 TACAATTACAGCGTGATCGAGGGCGGTCCCATAGGCGACACATTGGAGAAGATCTCCAAC 303

Qy    301 gagataaagatagtggcaacccctgatggaggatccatcttgaagatcagcaacaagtac 360
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Db    304 GAGATAAAGATAGTGGCAACCCCTGATGGAGGATCCATCTTGAAGATCAGCAACAAGTAC 363

Qy    361 cacaccaaaggtgaccatgaggtgaaggcagagcaggttaaggcaagtaaagaaatgggc 420
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Db    364 CACACCAAAGGTGACCATGAGGTGAAGGCAGAGCAGGTTAAGGCAAGTAAAGAAATGGGC 423

Qy    421 gagacacttttgagggccgttgagagctacctcttggcacactccgatgcctacaactaa 480
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Db    424 GAGACACTTTTGAGGGCCGTTGAGAGCTACCTCTTGGCACACTCCGATGCCTACAACTAA 483
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RESULT 12
BVAJ2109
LOCUS BVAJ2109 483 bp mRNA PLN 07-JAN-2000
DEFINITION Betula verrucosa mRNA for major pollen allergen Bet v 1 (Bet v 1 at22).
ACCESSION AJ002109
VERSION AJ002109.1 GI:2564225
KEYWORDS Betv1 gene; pollen allergen.
SOURCE European white birch.
ORGANISM Betula pendula
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; euphyllophytes; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I; Fagales; Betulaceae; Betula.
REFERENCE 1 (bases 1 to 483)
AUTHORS Friedl-Hajek,R., Radauer,C., O'Riordain,G., Hoffmann-Sommergruber,K., Leberl,K., Scheiner,O. and Breiteneder,H.
TITLE New Bet v 1 isoforms including a naturally occurring truncated form of the protein derived from Austrian birch pollen
JOURNAL Mol. Immunol. 36 (10), 639-645 (1999)
MEDLINE 99437514
REFERENCE 2 (bases 1 to 483)
AUTHORS Friedl-Hajek,R.
TITLE Direct Submission
JOURNAL Submitted (17-OCT-1997) Friedl-Hajek R., Institute of General and Experimental Pathology, University of Vienna, Waehringer Guertel 18-20, A-1090 Vienna, AUSTRIA
FEATURES Location/Qualifiers
source 1. .483
/organism="Betula pendula"
/db_xref="taxon:3505"
/clone="at22"
/tissue_type="pollen"
/dev_stage="mature"
gene 1. .483
/gene="Betv1"
CDS 1. .483
/gene="Betv1"
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/codon_start=1
/product="pollen allergen Betv1"
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/db_xref="GI:2564226"
/db_xref="SPTREMBL:O24642"
/translation="MGVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVEN IEGNGGPGTIKKISFPEGFPFKYVKDRVDEVDHTNFKYNYSVIEGGPMGDTLEKISNE IKIVATPDGGSILKISNKYHTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN "
BASE COUNT 148 a 109 c 122 g 104 t
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  Best Local Similarity  98.1%;  Pred. No. 2.7e-122;
  Matches  471;  Conservative    0;  Mismatches    9;  Indels    0;  Gaps    0;

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Db      4 GGTGTTTTCAATTACGAAACTGAGACCACCTCTGTTATCCCAGCGGCTCGACTGTTCAAG 63

Qy     61 gcctttatccttgatggcgataacctctttccaaaggttgcaccccaagccattagcagt 120
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Db     64 GCCTTTATCCTTGATGGCGATAATCTCTTTCCAAAGGTTGCACCCCAAGCCATTAGCAGT 123

Qy    121 gttgaaaacattgaaggaaatggagggcctggaaccattaagaagatcagctttcccgaa 180
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Db    124 GTTGAAAACATTGAAGGAAATGGAGGGCCTGGAACCATTAAGAAGATCAGCTTTCCCGAA 183

Qy    181 ggcctccctttcaagtacgtgaaggacagagttgatgaggtggaccacacaaacttcaaa 240
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Db    184 GGCTTCCCTTTCAAGTACGTGAAGGACAGAGTTGATGAGGTGGACCACACAAACTTCAAA 243

Qy    241 tacaattacagcgtgatcgagggcggtcccataggcgacacattggagaagatctccaac 300
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Db    244 TACAATTACAGCGTGATCGAGGGCGGTCCCATGGGCGACACATTGGAGAAGATCTCCAAC 303

Qy    301 gagataaagatagtggcaacccctgatggaggatccatcttgaagatcagcaacaagtac 360
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Db    304 GAGATAAAGATAGTGGCAACCCCTGATGGAGGATCCATCTTGAAGATAAGCAACAAGTAC 363

Qy    361 cacaccaaaggtgaccatgaggtgaaggcagagcaggttaaggcaagtaaagaaatgggc 420
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Db    364 CACACCAAAGGTGACCATGAGGTGAAGGCAGAGCAGGTTAAGGCAAGTAAAGAAATGGGC 423

Qy    421 gagacacttttgagggccgttgagagctacctcttggcacactccgatgcctacaactaa 480
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Db    424 GAGACACTTTTGAGGGCCGTTGAGAGCTACCTCTTGGCACACTCCGATGCCTACAACTAA 483
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RESULT 13
BVE6906
LOCUS BVE6906 483 bp mRNA PLN 07-JAN-2000
DEFINITION Betula verrucosa mRNA for pollen allergen Betv1, isoform at21.
ACCESSION AJ006906
VERSION AJ006906.1 GI:4006948
KEYWORDS Betv1 gene; pollen allergen.
SOURCE European white birch.
ORGANISM Betula pendula
Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta; euphyllophytes; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I; Fagales; Betulaceae; Betula.
REFERENCE 1 (bases 1 to 483)
AUTHORS Friedl-Hajek,R., Radauer,C., O'Riordain,G., Hoffmann-Sommergruber,K., Leberl,K., Scheiner,O. and Breiteneder,H.
TITLE New Bet v 1 isoforms including a naturally occurring truncated form of the protein derived from Austrian birch pollen
JOURNAL Mol. Immunol. 36 (10), 639-645 (1999)
MEDLINE 99437514
REFERENCE 2 (bases 1 to 483)
AUTHORS Friedl-Hajek,R.
TITLE Direct Submission
JOURNAL Submitted (10-JUN-1998) Friedl-Hajek R., Institute of General and Experimental Pathology, University of Vienna, Waehringer Guertel 18-20, A-1090 Vienna, AUSTRIA
FEATURES Location/Qualifiers
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/note="from Austrian trees"
gene 1. .483
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CDS 1. .483

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                     /codon_start=1
                     /product="pollen allergen Betv1, isoform at21"
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BASE COUNT      149 a    108 c    121 g    105 t
ORIGIN


  Query Match             97.0%;  Score 465.6;  DB 8;  Length 483;
  Best Local Similarity   98.1%;  Pred. No. 2.7e-122;
  Matches  471;  Conservative    0;  Mismatches    9;  Indels    0;  Gaps    0;

Qy      1 ggtgtgtttaattatgagactgagaccacctctgttatcccagcagctcgactgttcaag 60
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Db      4 GGTGTTTTCAATTACGAAACTGAGACCACCTCTGTTATCCCAGCAGCTAGGCTGTTCAAG 63

Qy     61 gcctttatccttgatggcgataacctctttccaaaggttgcaccccaagccattagcagt 120
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Db     64 GCCTTTATCCTTGATGGCGATAATCTCTTTCCAAAGGTTGCACCCCAAGCCATTAGCAGT 123

Qy    121 gttgaaaacattgaaggaaatggagggcctggaaccattaagaagatcagctttcccgaa 180
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Db    124 GTTGAAAACATTGAAGGAAATGGAGGGCCTGGAACCATTAAGAAGATCAGCTTTCCCGAA 183

Qy    181 ggcctccctttcaagtacgtgaaggacagagttgatgaggtggaccacacaaacttcaaa 240
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Db    184 GGCTTCCCTTTCAAGTACGTGAAGGACAGAGTTGATGAGGTGGACCACACAAACTTCAAA 243

Qy    241 tacaattacagcgtgatcgagggcggtcccataggcgacacattggagaagatctccaac 300
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Db    244 TACAATTACAGCGTGATCGAGGGCGGTCCCATAGGCGACACATTGGAGAAGATCTCCAAC 303

Qy    301 gagataaagatagtggcaacccctgatggaggatccatcttgaagatcagcaacaagtac 360
          |||||||||||||||||||||||||||||||||||||||||||||| ||||||||||||
Db    304 GAGATAAAGATAGTGGCAACCCCTGATGGAGGATCCATCTTGAAGATTAGCAACAAGTAC 363

Qy    361 cacaccaaaggtgaccatgaggtgaaggcagagcaggttaaggcaagtaaagaaatgggc 420
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Db    424 GAGACACTTTTGAGGGCCGTTGAGAGCTACCTCTTGGCACACTCCGATGCCTACAACTAA 483


RESULT  14
BVZ80105
LOCUS       BVZ80105      483 bp    mRNA            PLN       12-SEP-1996
DEFINITION  B.verrucosa mRNA for pollen allergen Betv1 (clone 2229).
ACCESSION   Z80105
VERSION     Z80105.1  GI:1542870
KEYWORDS    Betv1; pollen allergen.
SOURCE      European white birch.
  ORGANISM  Betula pendula
            Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
            euphyllophytes; Spermatophyta; Magnoliophyta; eudicotyledons;
            Rosidae; Fagales; Betulaceae; Betula.
REFERENCE   1  (bases 1 to 483)
  AUTHORS   Larsen,J.N.
  TITLE     PCR based cloning and sequencing of isogenes encoding the tree
            pollen major allergen Bet v 1 from Betula verrucosa, white birch
  JOURNAL   Unpublished
REFERENCE   2  (bases 1 to 483)
  AUTHORS   Larsen,J.N.
  TITLE     Direct Submission
  JOURNAL   Submitted (06-SEP-1996) Larsen J.N., ALK A/S, ALK Research, Boge
            Alle 10-12, Horsholm, DK-2970, Denmark
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Db    124 GTTGAAAACATTGAAGGAAATGGAGGGCCTGGAACCATTAAGAAGATCAGCTTTCCCGAA 183

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RESULT  15
BVZ80101
LOCUS       BVZ80101      483 bp    mRNA            PLN       12-SEP-1996
DEFINITION  B.verrucosa mRNA for pollen allergen Betv1 (clone 184).
ACCESSION   Z80101
VERSION     Z80101.1  GI:1542862
KEYWORDS    Betv1; pollen allergen.
SOURCE      European white birch.
  ORGANISM  Betula pendula
            Eukaryota; Viridiplantae; Streptophyta; Embryophyta; Tracheophyta;
            euphyllophytes; Spermatophyta; Magnoliophyta; eudicotyledons;
            Rosidae; Fagales; Betulaceae; Betula.
REFERENCE   1  (bases 1 to 483)
  AUTHORS   Larsen,J.N.
  TITLE     PCR based cloning and sequencing of isogenes encoding the tree
            pollen major allergen Bet v 1 from Betula verrucosa, white birch
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  JOURNAL   Unpublished
REFERENCE   2  (bases 1 to 483)
  AUTHORS   Larsen,J.N.
  TITLE     Direct Submission
  JOURNAL   Submitted (06-SEP-1996) Larsen J.N., ALK A/S, ALK Research, Boge
            Alle 10-12, Horsholm, DK-2970, Denmark
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BASE COUNT      146 a    111 c    122 g    104 t
ORIGIN


  Query Match             96.3%;  Score 462.4;  DB 8;  Length 483;
  Best Local Similarity   97.7%;  Pred. No. 2.2e-121;
  Matches  469;  Conservative    0;  Mismatches   11;  Indels    0;  Gaps    0;

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Qy     361 cacaccaaaggtgaccatgaggtgaaggcagagcaggttaaggcaagtaaagaaatgggc 420
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Qy     421 gagacactttgagggccgttgagagctacctcttggcacactccgatgcctacaactaa 480
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GenCore version 4.5


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ALIGNMENTS

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; Sequence 21, Application US/07847010
; Patent No. 5693495
;  GENERAL INFORMATION:
;    APPLICANT:  Breiteneder, Heimo
;    APPLICANT:  Reikerstorfer, Arnold
;    APPLICANT:  Valenta, Rudolf
;    APPLICANT:  Hoffmann - Sommergruber, Karin
;    APPLICANT:  Breitenbach, Michael
;    APPLICANT:  Kraft, Dietrich
;    APPLICANT:  Rumpold, Helmut
;    APPLICANT:  Scheiner, Otto
;    APPLICANT:  Ebner, Christof
;    APPLICANT:  Ferreira, Fatima
;    TITLE OF INVENTION:  Allergens of Alder Pollen and
;    TITLE OF INVENTION:  Applications Thereof
;    NUMBER OF SEQUENCES:  23
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Pennie & Edmonds
;      STREET:  1155 Avenue of the Americas
;      CITY:  New York
;      STATE:  New York
;      COUNTRY:  U.S.A.
;      ZIP:  10036-2711
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/07/847,010
;      FILING DATE:  01-JUN-1992
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Jones III, Harry C
;      REGISTRATION NUMBER:  20,280
;      REFERENCE/DOCKET NUMBER:  6530-010
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (212) 790-9090
;      TELEFAX:  (212) 869-9741/8864
;      TELEX:  66141 PENNIE
;  INFORMATION FOR SEQ ID NO:  21:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  672 base pairs
;      TYPE:  nucleic acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  cDNA
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;    HYPOTHETICAL:  NO
;    ANTI-SENSE:  NO
;    ORIGINAL SOURCE:
;      ORGANISM:  birch (Betula sp.)
;    IMMEDIATE SOURCE:
;      LIBRARY:  POLLEN FROM ALLERGON AB, ENGELHOLM, SWEDEN
US-07-847-010-21


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  Best Local Similarity   98.8%;  Pred. No. 3.2e-143;
  Matches  474;  Conservative    0;  Mismatches    6;  Indels    0;  Gaps    0;

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RESULT   2
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; Sequence 22, Application US/07847010
; Patent No. 5693495
;  GENERAL INFORMATION:
;    APPLICANT:  Breiteneder, Heimo
;    APPLICANT:  Reikerstorfer, Arnold
;    APPLICANT:  Valenta, Rudolf
;    APPLICANT:  Hoffmann - Sommergruber, Karin
;    APPLICANT:  Breitenbach, Michael
;    APPLICANT:  Kraft, Dietrich
;    APPLICANT:  Rumpold, Helmut
;    APPLICANT:  Scheiner, Otto
;    APPLICANT:  Ebner, Christof
;    APPLICANT:  Ferreira, Fatima
;    TITLE OF INVENTION:  Allergens of Alder Pollen and
;    TITLE OF INVENTION:  Applications Thereof
;    NUMBER OF SEQUENCES:  23
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Pennie & Edmonds
;      STREET:  1155 Avenue of the Americas
;      CITY:  New York
;      STATE:  New York
;      COUNTRY:  U.S.A.
;      ZIP:  10036-2711
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/07/847,010
;      FILING DATE:  01-JUN-1992
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Jones III, Harry C
;      REGISTRATION NUMBER:  20,280
;      REFERENCE/DOCKET NUMBER:  6530-010
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (212) 790-9090
;      TELEFAX:  (212) 869-9741/8864
;      TELEX:  66141 PENNIE
;  INFORMATION FOR SEQ ID NO:  22:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  480 base pairs
;      TYPE:  nucleic acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  cDNA
;    HYPOTHETICAL:  NO
;    ANTI-SENSE:  NO
;    ORIGINAL SOURCE:
;      ORGANISM:  birch (Betula sp.)
;    IMMEDIATE SOURCE:
;      LIBRARY:  POLLEN FROM ALLERGON AB, ENGELHOLM, SWEDEN
US-07-847-010-22


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          |||||||||||||||||||| ||||||||||||||||||||||||||||||||||||||
Db     64 GCCTTTATCCTTGATGGCGATAATCTCTTTCCAAAGGTTGCACCCCAAGCCATTAGCAGT 123

Qy    121 gttgaaaacattgaaggaaatggagggcctggaaccattaagaagatcagctttcccgaa 180
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    124 GTTGAAAACATTGAAGGAAATGGAGGGCCTGGAACCATTAAGAAGATCAGCTTTCCCGAA 183

Qy    181 ggcctccctttcaagtacgtgaaggacagagttgatgaggtggaccacacaaacttcaaa 240
          ||| ||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    184 GGCTTCCCTTTCAAGTACGTGAAGGACAGAGTTGATGAGGTGGACCACACAAACTTCAAA 243

Qy    241 tacaattacagcgtgatcgagggcggtcccataggcgacacattggagaagatctccaac 300
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    244 TACAATTACAGCGTGATCGAGGGCGGTCCCATAGGCGACACATTGGAGAAGATCTCCAAC 303

Qy    301 gagataaagatagtggcaacccctgatggaggatccatcttgaagatcagcaacaagtac 360
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    304 GAGATAAAGATAGTGGCAACCCCTGATGGAGGATCCATCTTGAAGATCAGCAACAAGTAC 363

Qy    361 cacaccaaaggtgaccatgaggtgaaggcagagcaggttaaggcaagtaaagaaatgggc 420
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    364 CACACCAAAGGTGACCATGAGGTGAAGGCAGAGCAGGTTAAGGCAAGTAAAGAAATGGGC 423

Qy    421 gagacactttgagggccgttgagagctacctcttggcacactccgatgcctacaac 477
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db    424 GAGACACTTTTGAGGGCCGTTGAGAGCTACCTCTTGGCACACTCCGATGCCTACAAC 480


RESULT   3
US-07-847-010-1
; Sequence 1, Application US/07847010
; Patent No. 5693495
;  GENERAL INFORMATION:
```

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;    APPLICANT:  Breiteneder, Heimo
;    APPLICANT:  Reikerstorfer, Arnold
;    APPLICANT:  Valenta, Rudolf
;    APPLICANT:  Hoffmann - Sommergruber, Karin
;    APPLICANT:  Breitenbach, Michael
;    APPLICANT:  Kraft, Dietrich
;    APPLICANT:  Rumpold, Helmut
;    APPLICANT:  Scheiner, Otto
;    APPLICANT:  Ebner, Christof
;    APPLICANT:  Ferreira, Fatima
;    TITLE OF INVENTION:  Allergens of Alder Pollen and
;    TITLE OF INVENTION:  Applications Thereof
;    NUMBER OF SEQUENCES:  23
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Pennie & Edmonds
;      STREET:  1155 Avenue of the Americas
;      CITY:  New York
;      STATE:  New York
;      COUNTRY:  U.S.A.
;      ZIP:  10036-2711
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/07/847,010
;      FILING DATE:  01-JUN-1992
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Jones III, Harry C
;      REGISTRATION NUMBER:  20,280
;      REFERENCE/DOCKET NUMBER:  6530-010
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (212) 790-9090
;      TELEFAX:  (212) 869-9741/8864
;      TELEX:  66141 PENNIE
;  INFORMATION FOR SEQ ID NO:  1:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  665 base pairs
;      TYPE:  nucleic acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  cDNA
;    HYPOTHETICAL:  NO
;    ANTI-SENSE:  NO
;    ORIGINAL SOURCE:
;      ORGANISM:  Alder (Alnus sp.)
US-07-847-010-1


  Query Match           78.0%;  Score 374.4;  DB 2;  Length 665;
  Best Local Similarity  86.2%;  Pred. No. 4.3e-112;
  Matches  414;  Conservative    0;  Mismatches   66;  Indels    0;  Gaps    0;

Qy      1 ggtgtgtttaattatgagactgagaccacctctgttatcccagcagctcgactgttcaag 60
          ||||| || ||||| ||  | || ||| |||| |||||||||||| ||||| |||||||||
Db      4 GGTGTTTTCAATTACGAAGCGGAAACCCCCTCCGTTATCCCAGCGGCTCGGCTGTTCAAG 63

Qy     61 gcctttatccttgatggcgataacctctttccaaaggttgcaccccaagccattagcagt 120
          ||||||||||||||||||||||| ||| ||||||||||||||  ||||  ||||||||
Db     64 GCCTTTATCCTTGATGGCGATAAGCTCCTTCCAAAGGTTGCACCTGAAGCTGTTAGCAGT 123

Qy    121 gttgaaaacattgaaggaaatggagggcctggaaccattaagaagatcagctttcccgaa 180
          |||||  |||||||||||||||||||||||||||||||||| ||||||||| ||||||||||
Db    124 GTTGAGAACATTGAAGGAAATGGAGGGCCTGGAACCATCAAGAAGATCACCTTTCCCGAA 183

Qy    181 ggcctccctttcaagtacgtgaaggacagagttgatgaggtggaccacacaaacttcaaa 240
          |||  ||||||  ||||||||  ||||| || ||||||||||| || | |  ||||||||||
Db    184 GGCAGCCCTTTTAAGTACGTAAAGGAGAGGGTTGATGAGGTTGATCGCGTAAACTTCAAA 243

Qy    241 tacaattacagcgtgatcgagggcggtcccataggcgacacattggagaagatctccaac 300
          ||||  | ||||||||||||||| ||| || | |||||| || |||||||| |||  |||

Db    244 TACAGCTTCAGCGTGATCGAGGGTGGTGCCGTGGGCGACGCACTGGAGAAGGTCTGTAAC 303

Qy    301 gagataaagatagtggcaacccctgatggaggatccatcttgaagatcagcaacaagtac 360
          ||||| |||||||||||| ||||||||||||||||||||||||||||||||||||||| |
Db    304 GAGATCAAGATAGTGGCAGCCCCTGATGGAGGATCCATCTTGAAGATCAGCAACAAGTTC 363

Qy    361 cacaccaaaggtgaccatgaggtgaaggcagagcaggttaaggcaagtaaagaaatgggc 420
          |||||||||| |||||||| | || |||||||| |||||      ||||||| || |
Db    364 CACACCAAAGGCGACCATGAGATAAATGCAGAGCAGATTAAGATTGAAAAAGAAAAGGCC 423

Qy    421 gagacacttttgagggccgttgagagctacctcttggcacactccgatgcctacaactaa 480
          | |  |||| | | ||||||||||||||||||||||||||||||| ||||||||||||||
Db    424 GTGGGACTTCTCAAGGCCGTTGAGAGCTACCTCTTGGCACACTCTGATGCCTACAACTAA 483


RESULT   4
US-07-847-010-2
; Sequence 2, Application US/07847010
; Patent No. 5693495
;  GENERAL INFORMATION:
;    APPLICANT:  Breiteneder, Heimo
;    APPLICANT:  Reikerstorfer, Arnold
;    APPLICANT:  Valenta, Rudolf
;    APPLICANT:  Hoffmann - Sommergruber, Karin
;    APPLICANT:  Breitenbach, Michael
;    APPLICANT:  Kraft, Dietrich
;    APPLICANT:  Rumpold, Helmut
;    APPLICANT:  Scheiner, Otto
;    APPLICANT:  Ebner, Christof
;    APPLICANT:  Ferreira, Fatima
;    TITLE OF INVENTION:  Allergens of Alder Pollen and
;    TITLE OF INVENTION:  Applications Thereof
;    NUMBER OF SEQUENCES:  23
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Pennie & Edmonds
;      STREET:  1155 Avenue of the Americas
;      CITY:  New York
;      STATE:  New York
;      COUNTRY:  U.S.A.
;      ZIP:  10036-2711
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/07/847,010
;      FILING DATE:  01-JUN-1992
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Jones III, Harry C
;      REGISTRATION NUMBER:  20,280
;      REFERENCE/DOCKET NUMBER:  6530-010
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (212) 790-9090
;      TELEFAX:  (212) 869-9741/8864
;      TELEX:  66141 PENNIE
;  INFORMATION FOR SEQ ID NO:  2:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  480 base pairs
;      TYPE:  nucleic acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  cDNA
;    HYPOTHETICAL:  NO
;    ANTI-SENSE:  NO
;    ORIGINAL SOURCE:
;      ORGANISM:  Alder (Alnus sp.)
US-07-847-010-2


  Query Match           77.4%;  Score 371.4;  DB 2;  Length 480;
  Best Local Similarity  86.2%;  Pred. No. 3.4e-111;
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  Matches  411;  Conservative    0;  Mismatches   66;  Indels    0;  Gaps    0;

Qy      1 ggtgtgtttaattatgagactgagaccacctctgttatcccagcagctcgactgttcaag 60
          ||||| || ||||| ||   | || ||| |||| |||||||||||| ||||| |||||||||
Db      4 GGTGTTTTCAATTACGAAGCGGAAACCCCCTCCGTTATCCCAGCGGCTCGGCTGTTCAAG 63

Qy     61 gcctttatccttgatggcgataacctctttccaaaggttgcaccccaagccattagcagt 120
          ||||||||||||||||||||||| ||| ||||||||||||||||  ||||  ||||||||
Db     64 GCCTTTATCCTTGATGGCGATAAGCTCCTTCCAAAGGTTGCACCTGAAGCTGTTAGCAGT 123

Qy    121 gttgaaaacattgaaggaaatggagggcctggaaccattaagaagatcagctttcccgaa 180
          |||||  |||||||||||||||||||||||||||||||||||| |||||||||| ||||||||||
Db    124 GTTGAGAACATTGAAGGAAATGGAGGGCCTGGAACCATCAAGAAGATCACCTTTCCCGAA 183

Qy    181 ggcctccctttcaagtacgtgaaggacagagttgatgaggtggaccacacaaacttcaaa 240
          |||  ||||||  |||||||| |||||  || ||||||||||| || | |  ||||||||||
Db    184 GGCAGCCCTTTTAAGTACGTAAAGGAGAGGGTTGATGAGGTTGATCGCGTAAACTTCAAA 243

Qy    241 tacaattacagcgtgatcgagggcggtcccataggcgacacattggagaagatctccaac 300
          ||||  | ||||||||||||||| ||| || | |||||| || |||||||| |||  |||
Db    244 TACAGCTTCAGCGTGATCGAGGGTGGTGCCGTGGGCGACGCACTGGAGAAGGTCTGTAAC 303

Qy    301 gagataaagatagtggcaacccctgatggaggatccatcttgaagatcagcaacaagtac 360
          |||||  |||||||||||| ||||||||||||||||||||||||||||||||||||||| |
Db    304 GAGATCAAGATAGTGGCAGCCCCTGATGGAGGATCCATCTTGAAGATCAGCAACAAGTTC 363

Qy    361 cacaccaaaggtgaccatgaggtgaaggcagagcaggttaaggcaagtaaagaaatgggc 420
          |||||||||| |||||||| | || |||||||| |||||      ||||||| || |
Db    364 CACACCAAAGGCGACCATGAGATAAATGCAGAGCAGATTAAGATTGAAAAAGAAAAGGCC 423

Qy    421 gagacacttttgagggccgttgagagctacctcttggcacactccgatgcctacaac 477
          | |  |||| | ||||||||||||||||||||||||||||||| ||||||||||
Db    424 GTGGGACTTCTCAAGGCCGTTGAGAGCTACCTCTTGGCACACTCTGATGCCTACAAC 480


RESULT   5
US-07-847-010-15
; Sequence 15, Application US/07847010
; Patent No. 5693495
;  GENERAL INFORMATION:
;    APPLICANT:  Breiteneder, Heimo
;    APPLICANT:  Reikerstorfer, Arnold
;    APPLICANT:  Valenta, Rudolf
;    APPLICANT:  Hoffmann - Sommergruber, Karin
;    APPLICANT:  Breitenbach, Michael
;    APPLICANT:  Kraft, Dietrich
;    APPLICANT:  Rumpold, Helmut
;    APPLICANT:  Scheiner, Otto
;    APPLICANT:  Ebner, Christof
;    APPLICANT:  Ferreira, Fatima
;    TITLE OF INVENTION:  Allergens of Alder Pollen and
;    TITLE OF INVENTION:  Applications Thereof
;    NUMBER OF SEQUENCES:  23
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Pennie & Edmonds
;      STREET:  1155 Avenue of the Americas
;      CITY:  New York
;      STATE:  New York
;      COUNTRY:  U.S.A.
;      ZIP:  10036-2711
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/07/847,010
;      FILING DATE:  01-JUN-1992
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Jones III, Harry C
;      REGISTRATION NUMBER:  20,280
;      REFERENCE/DOCKET NUMBER:  6530-010
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (212) 790-9090
;      TELEFAX:  (212) 869-9741/8864
;      TELEX:  66141 PENNIE
;  INFORMATION FOR SEQ ID NO:  15:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  655 base pairs
;      TYPE:  nucleic acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  cDNA
;    HYPOTHETICAL:  NO
;    ANTI-SENSE:  NO
;    ORIGINAL SOURCE:
;      ORGANISM:  hazel (Corylus sp.)
;    IMMEDIATE SOURCE:
;      LIBRARY:  POLLEN FROM ALLERGON AB, ENGELHOLM, SWEDEN
US-07-847-010-15


  Query Match             73.7%;  Score 353.6;  DB 2;  Length 655;
  Best Local Similarity   83.5%;  Pred. No. 2.4e-105;
  Matches  401;  Conservative    0;  Mismatches   79;  Indels    0;  Gaps    0;

Qy      1 ggtgtgtttaattatgagactgagaccacctctgttatcccagcagctcgactgttcaag 60
          ||||| || ||||| ||| |||||||||||| |||||||| || ||  | |||||||||
Db      4 GGTGTTTTCAATTACGAGGCTGAGACCACCTCCGTTATCCCTGCGGCAAGGCTGTTCAAG 63

Qy     61 gcctttatccttgatggcgataacctctttccaaaggttgcaccccaagccattagcagt 120
           ||| | ||||||||||||||||| ||| | |||||||||||||| ||||| |||| |||
Db     64 TCCTATGTCCTTGATGGCGATAAGCTCATCCCAAAGGTTGCACCTCAAGCTATTACCAGC 123

Qy    121 gttgaaaacattgaaggaaatggagggcctggaaccattaagaagatcagctttcccgaa 180
          |||||||| ||||||||||||||||||||||||||||| ||||| |||| ||||  ||||
Db    124 GTTGAAAACGTTGAAGGAAATGGAGGGCCTGGAACCATCAAGAATATCACCTTTGGCGAA 183

Qy    181 ggcctccctttcaagtacgtgaaggacagagttgatgaggtggaccacacaaacttcaaa 240
          |||  || || |||||||||||||| || |||||||||| ||| ||||||||||| |
Db    184 GGCAGCCGTTACAAGTACGTGAAGGAGAGGGTTGATGAGGTTGACAACACAAACTTCACA 243

Qy    241 tacaattacagcgtgatcgagggcggtcccataggcgacacattggagaagatctccaac 300
          ||||  |||| |||||||||||| | |  | | || ||||   |||||||| ||| | ||
Db    244 TACAGCTACACCGTGATCGAGGGTGATGTCCTGGGTGACAAGCTGGAGAAGGTCTGCCAC 303

Qy    301 gagataaagatagtggcaacccctgatggaggatccatcttgaagatcagcaacaagtac 360
          ||| | |||||||||||| |||||| |||||||||||||||||||||||||| ||||| |
Db    304 GAGCTGAAGATAGTGGCAGCCCCTGGTGGAGGATCCATCTTGAAGATCAGCAGCAAGTTC 363

Qy    361 cacaccaaaggtgaccatgaggtgaaggcagagcaggttaaggcaagtaaagaaatgggc 420
          ||| |||||||||||||||| | || |||||| || | ||||     |||||||||| |
Db    364 CACGCCAAAGGTGACCATGAGATTAATGCAGAGGAGATGAAGGGTGCCAAAGAAATGGCC 423

Qy    421 gagacacttttgagggccgttgagagctacctcttggcacactccgatgcctacaactaa 480
          |||| |||||| ||||| ||||||| |||||| |||||||||| | ||  |||||||||
Db    424 GAGAAACTTTTAAGGGCGGTTGAGACCTACCTATTGGCACACTCTGCTGAATACAACTAA 483


RESULT   6
US-07-847-010-16
; Sequence 16, Application US/07847010
; Patent No. 5693495
;  GENERAL INFORMATION:
;    APPLICANT:  Breiteneder, Heimo
;    APPLICANT:  Reikerstorfer, Arnold
;    APPLICANT:  Valenta, Rudolf
;    APPLICANT:  Hoffmann - Sommergruber, Karin
;    APPLICANT:  Breitenbach, Michael
;    APPLICANT:  Kraft, Dietrich
;    APPLICANT:  Rumpold, Helmut
;    APPLICANT:  Scheiner, Otto
;    APPLICANT:  Ebner, Christof
;    APPLICANT:  Ferreira, Fatima
;    TITLE OF INVENTION:  Allergens of Alder Pollen and
```

```
;    TITLE OF INVENTION:  Applications Thereof
;    NUMBER OF SEQUENCES:  23
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Pennie & Edmonds
;      STREET:  1155 Avenue of the Americas
;      CITY:  New York
;      STATE:  New York
;      COUNTRY:  U.S.A.
;      ZIP:  10036-2711
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/07/847,010
;      FILING DATE:  01-JUN-1992
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Jones III, Harry C
;      REGISTRATION NUMBER:  20,280
;      REFERENCE/DOCKET NUMBER:  6530-010
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (212) 790-9090
;      TELEFAX:  (212) 869-9741/8864
;      TELEX:  66141 PENNIE
;  INFORMATION FOR SEQ ID NO:  16:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  480 base pairs
;      TYPE:  nucleic acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  cDNA
;    HYPOTHETICAL:  NO
;    ANTI-SENSE:  NO
;    ORIGINAL SOURCE:
;      ORGANISM:  hazel (Corylus sp.)
;    IMMEDIATE SOURCE:
;      LIBRARY:  POLLEN FROM ALLERGON AB, ENGELHOLM, SWEDEN
US-07-847-010-16


  Query Match             73.0%;  Score 350.6;  DB 2;  Length 480;
  Best Local Similarity   83.4%;  Pred. No. 1.9e-104;
  Matches  398;  Conservative    0;  Mismatches   79;  Indels    0;  Gaps    0;

Qy       1 ggtgtgtttaattatgagactgagaccacctctgttatcccagcagctcgactgttcaag 60
           ||||| || ||||| ||| ||||||||||||| |||||||| || ||  | |||||||||
Db       4 GGTGTTTTCAATTACGAGGCTGAGACCACCTCCGTTATCCCTGCGGCAAGGCTGTTCAAG 63

Qy      61 gcctttatccttgatggcgataacctctttccaaaggttgcaccccaagccattagcagt 120
            ||| | |||||||||||||||| ||| | |||||||||||||| ||||| |||| |||
Db      64 TCCTATGTCCTTGATGGCGATAAGCTCATCCCAAAGGTTGCACCTCAAGCTATTACCAGC 123

Qy     121 gttgaaaacattgaaggaaatggagggcctggaaccattaagaagatcagctttcccgaa 180
           |||||||| |||||||||||||||||||||||||||| ||||| |||| |||| |||| 
Db     124 GTTGAAAACGTTGAAGGAAATGGAGGGCCTGGAACCATCAAGAATATCACCTTTGGCGAA 183

Qy     181 ggcctccctttcaagtacgtgaaggacagagttgatgaggtggaccacacaaacttcaaa 240
           |||  || || |||||||||||||| || |||||||||| ||| ||||||||||| | 
Db     184 GGCAGCCGTTACAAGTACGTGAAGGAGAGGGTTGATGAGGTTGACAACACAAACTTCACA 243

Qy     241 tacaattacagcgtgatcgagggcggtcccataggcgacacattggagaagatctccaac 300
           ||||  |||| |||||||||||| | |  | | || ||||   |||||||| ||| | ||
Db     244 TACAGCTACACCGTGATCGAGGGTGATGTCCTGGGTGACAAGCTGGAGAAGGTCTGCCAC 303

Qy     301 gagataaagatagtggcaacccctgatggaggatccatcttgaagatcagcaacaagtac 360
           ||| | |||||||||||| |||||| |||||||||||||||||||||||||||||| |||| |
Db     304 GAGCTGAAGATAGTGGCAGCCCCTGGTGGAGGATCCATCTTGAAGATCAGCAGCAAGTTC 363

Qy     361 cacaccaaaggtgaccatgaggtgaaggcagagcaggttaaggcaagtaaagaaatgggc 420
           ||| |||||||||||||||| | || |||||| || | ||||     |||||||||| |
Db     364 CACGCCAAAGGTGACCATGAGATTAATGCAGAGGAGATGAAGGGTGCCAAAGAAATGGCC 423

Qy     421 gagacacttttgagggccgttgagagctacctcttggcacactccgatgcctacaac 477
           |||| |||||| ||||| |||||||| |||||| |||||||||||| | ||  ||||||
Db     424 GAGAAACTTTTAAGGGCGGTTGAGACCTACCTATTGGCACACTCTGCTGAATACAAC 480


RESULT   7
US-07-847-010-12
; Sequence 12, Application US/07847010
; Patent No. 5693495
;  GENERAL INFORMATION:
;    APPLICANT:  Breiteneder, Heimo
;    APPLICANT:  Reikerstorfer, Arnold
;    APPLICANT:  Valenta, Rudolf
;    APPLICANT:  Hoffmann - Sommergruber, Karin
;    APPLICANT:  Breitenbach, Michael
;    APPLICANT:  Kraft, Dietrich
;    APPLICANT:  Rumpold, Helmut
;    APPLICANT:  Scheiner, Otto
;    APPLICANT:  Ebner, Christof
;    APPLICANT:  Ferreira, Fatima
;    TITLE OF INVENTION:  Allergens of Alder Pollen and
;    TITLE OF INVENTION:  Applications Thereof
;    NUMBER OF SEQUENCES:  23
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Pennie & Edmonds
;      STREET:  1155 Avenue of the Americas
;      CITY:  New York
;      STATE:  New York
;      COUNTRY:  U.S.A.
;      ZIP:  10036-2711
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/07/847,010
;      FILING DATE:  01-JUN-1992
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Jones III, Harry C
;      REGISTRATION NUMBER:  20,280
;      REFERENCE/DOCKET NUMBER:  6530-010
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (212) 790-9090
;      TELEFAX:  (212) 869-9741/8864
;      TELEX:  66141 PENNIE
;  INFORMATION FOR SEQ ID NO:  12:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  742 base pairs
;      TYPE:  nucleic acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  cDNA
;    HYPOTHETICAL:  NO
;    ANTI-SENSE:  NO
;    ORIGINAL SOURCE:
;      ORGANISM:  hazel (Corylus sp.)
;    IMMEDIATE SOURCE:
;      LIBRARY:  POLLEN FROM ALLERGON AB, ENGELHOLM, SWEDEN
US-07-847-010-12


  Query Match             72.7%;  Score 348.8;  DB 2;  Length 742;
  Best Local Similarity   82.9%;  Pred. No. 9.1e-104;
  Matches  398;  Conservative    0;  Mismatches   82;  Indels    0;  Gaps    0;

Qy       1 ggtgtgtttaattatgagactgagaccacctctgttatcccagcagctcgactgttcaag 60
           ||||| || ||||| |||  |||||| ||||  |||||||||||| ||  | |||||||||
Db       4 GGTGTTTTCAATTACGAGGTTGAGACTCCCTCCGTTATCCCAGCGGCAAGGCTGTTCAAG 63

Qy      61 gcctttatccttgatggcgataacctctttccaaaggttgcaccccaagccattagcagt 120
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Db     64 TCCTATGTCCTTGATGGCGATAAGCTCATCCCAAAGGTTGCACCTCAAGCTATTACCAGC 123

Qy    121 gttgaaaacattgaaggaaatggagggcctggaaccattaagaagatcagctttcccgaa 180
Db    124 GTTGAAAACGTTGAAGGAAATGGAGGGCCTGGAACCATCAAGAATATCACCTTTGGCGAA 183

Qy    181 ggcctccctttcaagtacgtgaaggacagagttgatgaggtggaccacacaaacttcaaa 240
Db    184 GGCAGCCGTTACAAGTACGTGAAGGAGAGGGTTGATGAGGTTGACAACACAAACTTCAAA 243

Qy    241 tacaattacagcgtgatcgagggcggtcccataggcgacacattggagaagatctccaac 300
Db    244 TATAGCTACACCGTGATCGAGGGTGATGTCCTGGGTGACAAGCTGGAGAAGGTCTGCAGC 303

Qy    301 gagataaagatagtggcaacccctgatggaggatccatcttgaagatcagcaacaagtac 360
Db    304 GAGCTGAAGATAGTGGCAGCCCCTGGTGGAGGATCCATCTTGAAGATCAGCAGCAAGTTC 363

Qy    361 cacaccaaaggtgaccatgaggtgaaggcagagcaggttaaggcaagtaaagaaatgggc 420
Db    364 CACGCCAAAGGCGACCATGAGATTAATGCAGAGGAGATGAAGGGTGCCAAAGAAATGGCC 423

Qy    421 gagacacttttgagggccgttgagagctacctcttggcacactccgatgcctacaactaa 480
Db    424 GAGAAACTTTTAAGGGCGGTTGAGACCTACCTATTGGCACACTCTGCTGAATACAACTAA 483


RESULT   8
US-07-847-010-13
; Sequence 13, Application US/07847010
; Patent No. 5693495
;  GENERAL INFORMATION:
;    APPLICANT:  Breiteneder, Heimo
;    APPLICANT:  Reikerstorfer, Arnold
;    APPLICANT:  Valenta, Rudolf
;    APPLICANT:  Hoffmann - Sommergruber, Karin
;    APPLICANT:  Breitenbach, Michael
;    APPLICANT:  Kraft, Dietrich
;    APPLICANT:  Rumpold, Helmut
;    APPLICANT:  Scheiner, Otto
;    APPLICANT:  Ebner, Christof
;    APPLICANT:  Ferreira, Fatima
;    TITLE OF INVENTION:  Allergens of Alder Pollen and
;    TITLE OF INVENTION:  Applications Thereof
;    NUMBER OF SEQUENCES:  23
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Pennie & Edmonds
;      STREET:  1155 Avenue of the Americas
;      CITY:  New York
;      STATE:  New York
;      COUNTRY:  U.S.A.
;      ZIP:  10036-2711
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/07/847,010
;      FILING DATE:  01-JUN-1992
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Jones III, Harry C
;      REGISTRATION NUMBER:  20,280
;      REFERENCE/DOCKET NUMBER:  6530-010
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (212) 790-9090
;      TELEFAX:  (212) 869-9741/8864
;      TELEX:  66141 PENNIE
;  INFORMATION FOR SEQ ID NO:  13:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  480 base pairs
;      TYPE:  nucleic acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  cDNA
;    HYPOTHETICAL:  NO
;    ANTI-SENSE:  NO
;    ORIGINAL SOURCE:
;      ORGANISM:  hazel (Corylus sp.)
;    IMMEDIATE SOURCE:
;      LIBRARY:  POLLEN FROM ALLERGON AB, ENGELHOLM, SWEDEN
US-07-847-010-13


  Query Match             72.0%;  Score 345.8;  DB 2;  Length 480;
  Best Local Similarity   82.8%;  Pred. No. 6.8e-103;
  Matches  395;  Conservative    0;  Mismatches   82;  Indels    0;  Gaps    0;

Qy      1 ggtgtgtttaattatgagactgagaccacctctgttatcccagcagctcgactgttcaag 60
Db      4 GGTGTTTTCAATTACGAGGTTGAGACTCCCTCCGTTATCCCAGCGGCAAGGCTGTTCAAG 63

Qy     61 gcctttatccttgatggcgataacctctttccaaaggttgcaccccaagccattagcagt 120
Db     64 TCCTATGTCCTTGATGGCGATAAGCTCATCCCAAAGGTTGCACCTCAAGCTATTACCAGC 123

Qy    121 gttgaaaacattgaaggaaatggagggcctggaaccattaagaagatcagctttcccgaa 180
Db    124 GTTGAAAACGTTGAAGGAAATGGAGGGCCTGGAACCATCAAGAATATCACCTTTGGCGAA 183

Qy    181 ggcctccctttcaagtacgtgaaggacagagttgatgaggtggaccacacaaacttcaaa 240
Db    184 GGCAGCCGTTACAAGTACGTGAAGGAGAGGGTTGATGAGGTTGACAACACAAACTTCAAA 243

Qy    241 tacaattacagcgtgatcgagggcggtcccataggcgacacattggagaagatctccaac 300
Db    244 TATAGCTACACCGTGATCGAGGGTGATGTCCTGGGTGACAAGCTGGAGAAGGTCTGCAGC 303

Qy    301 gagataaagatagtggcaacccctgatggaggatccatcttgaagatcagcaacaagtac 360
Db    304 GAGCTGAAGATAGTGGCAGCCCCTGGTGGAGGATCCATCTTGAAGATCAGCAGCAAGTTC 363

Qy    361 cacaccaaaggtgaccatgaggtgaaggcagagcaggttaaggcaagtaaagaaatgggc 420
Db    364 CACGCCAAAGGCGACCATGAGATTAATGCAGAGGAGATGAAGGGTGCCAAAGAAATGGCC 423

Qy    421 gagacacttttgagggccgttgagagctacctcttggcacactccgatgcctacaac 477
Db    424 GAGAAACTTTTAAGGGCGGTTGAGACCTACCTATTGGCACACTCTGCTGAATACAAC 480


RESULT   9
US-07-847-010-9
; Sequence 9, Application US/07847010
; Patent No. 5693495
;  GENERAL INFORMATION:
;    APPLICANT:  Breiteneder, Heimo
;    APPLICANT:  Reikerstorfer, Arnold
;    APPLICANT:  Valenta, Rudolf
;    APPLICANT:  Hoffmann - Sommergruber, Karin
;    APPLICANT:  Breitenbach, Michael
;    APPLICANT:  Kraft, Dietrich
;    APPLICANT:  Rumpold, Helmut
;    APPLICANT:  Scheiner, Otto
;    APPLICANT:  Ebner, Christof
;    APPLICANT:  Ferreira, Fatima
;    TITLE OF INVENTION:  Allergens of Alder Pollen and
;    TITLE OF INVENTION:  Applications Thereof
;    NUMBER OF SEQUENCES:  23
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Pennie & Edmonds
;      STREET:  1155 Avenue of the Americas
;      CITY:  New York
;      STATE:  New York
```

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;       COUNTRY:  U.S.A.
;       ZIP:  10036-2711
;     COMPUTER READABLE FORM:
;       MEDIUM TYPE:  Floppy disk
;       COMPUTER:  IBM PC compatible
;       OPERATING SYSTEM:  PC-DOS/MS-DOS
;       SOFTWARE:  PatentIn Release #1.0, Version #1.25
;     CURRENT APPLICATION DATA:
;       APPLICATION NUMBER:  US/07/847,010
;       FILING DATE:  01-JUN-1992
;       CLASSIFICATION:  435
;     ATTORNEY/AGENT INFORMATION:
;       NAME:  Jones III, Harry C
;       REGISTRATION NUMBER:  20,280
;       REFERENCE/DOCKET NUMBER:  6530-010
;     TELECOMMUNICATION INFORMATION:
;       TELEPHONE:  (212) 790-9090
;       TELEFAX:  (212) 869-9741/8864
;       TELEX:  66141 PENNIE
;   INFORMATION FOR SEQ ID NO:  9:
;     SEQUENCE CHARACTERISTICS:
;       LENGTH:  619 base pairs
;       TYPE:  nucleic acid
;       STRANDEDNESS:  single
;       TOPOLOGY:  linear
;     MOLECULE TYPE:  cDNA
;     HYPOTHETICAL:  NO
;     ANTI-SENSE:  NO
;     ORIGINAL SOURCE:
;       ORGANISM:  hazel (Corylus sp.)
;     IMMEDIATE SOURCE:
;       LIBRARY:  POLLEN FROM ALLERGON AB, ENGELHOLM, SWEDEN
US-07-847-010-9


  Query Match             72.0%;  Score 345.6;  DB 2;  Length 619;
  Best Local Similarity   82.5%;  Pred. No. 9.1e-103;
  Matches  396;  Conservative    0;  Mismatches   84;  Indels    0;  Gaps    0;

Qy       1 ggtgtgtttaattatgagactgagaccacctctgttatcccagcagctcgactgttcaag 60
           ||||| || ||||| |||  ||||||  |||| |||||||| || ||  | |||||||||
Db       4 GGTGTTTTCAATTACGAGGTTGAGACTCCCTCCGTTATCCCTGCGGCAAGGCTGTTCAAG 63

Qy      61 gcctttatccttgatggcgataacctctttccaaaggttgcaccccaagccattagcagt 120
             ||| | ||||||||||||||||| ||| | |||||||||||||| ||||| |||| |||
Db      64 TCCTATGTCCTTGATGGCGATAAGCTCATCCCAAAGGTTGCACCTCAAGCTATTACCAGC 123

Qy     121 gttgaaaacattgaaggaaatggagggcctggaaccattaagaagatcagctttcccgaa 180
           ||||||||| |||||||||||||||||||||||||||| ||||| |||| ||||  ||||
Db     124 GTTGAAAACGTTGAAGGAAATGGAGGGCCTGGAACCATCAAGAATATCACCTTTGGCGAA 183

Qy     181 ggcctccctttcaagtacgtgaaggacagagttgatgaggtggaccacacaaacttcaaa 240
           |||  || || |||||||||||||| || |||||||||| ||| ||||||||||| |
Db     184 GGCAGCCGTTACAAGTACGTGAAGGAGAGGGTTGATGAGGTTGACAACACAAACTTCACA 243

Qy     241 tacaattacagcgtgatcgagggcggtcccataggcgacacattggagaagatctccaac 300
           ||||  |||| |||||||||||| | |  | | || ||||   |||||||| ||| | ||
Db     244 TACAGCTACACCGTGATCGAGGGTGATGTCCTGGGTGACAAGCTGGAGAAGGTCTGCCAC 303

Qy     301 gagataaagatagtggcaacccctgatggaggatccatcttgaagatcagcaacaagtac 360
           ||| | |||||||||||| |||||| ||||||||||||||||||||||||| ||||| |
Db     304 GAGCTGAAGATAGTGGCAGCCCCTGGTGGAGGATCCATCTTGAAGATCAGCAGCAAGTTC 363

Qy     361 cacaccaaaggtgaccatgaggtgaaggcagagcaggttaaggcaagtaaagaaatgggc 420
           ||| ||||||| ||||||||| | || |||||| || | ||||     ||||||||||
Db     364 CACGCCAAAGGCGACCATGAGATTAATGCAGAGGAGATGAAGGGTGCCAAAGAAATGGCA 423

Qy     421 gagacacttttgagggccgttgagagctacctcttggcacactccgatgcctacaactaa 480
           |||| |||||| ||||| ||||||| |||||||||| | ||  ||||||||||
Db     424 GAGAAACTTTTAAGGGCGGTTGAGACCTACCTATTGGCACACTCTGCTGAATACAACTAA 483


RESULT  10
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US-07-847-010-18
; Sequence 18, Application US/07847010
; Patent No. 5693495
;  GENERAL INFORMATION:
;    APPLICANT:  Breiteneder, Heimo
;    APPLICANT:  Reikerstorfer, Arnold
;    APPLICANT:  Valenta, Rudolf
;    APPLICANT:  Hoffmann - Sommergruber, Karin
;    APPLICANT:  Breitenbach, Michael
;    APPLICANT:  Kraft, Dietrich
;    APPLICANT:  Rumpold, Helmut
;    APPLICANT:  Scheiner, Otto
;    APPLICANT:  Ebner, Christof
;    APPLICANT:  Ferreira, Fatima
;    TITLE OF INVENTION:  Allergens of Alder Pollen and
;    TITLE OF INVENTION:  Applications Thereof
;    NUMBER OF SEQUENCES:  23
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Pennie & Edmonds
;      STREET:  1155 Avenue of the Americas
;      CITY:  New York
;      STATE:  New York
;      COUNTRY:  U.S.A.
;      ZIP:  10036-2711
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/07/847,010
;      FILING DATE:  01-JUN-1992
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Jones III, Harry C
;      REGISTRATION NUMBER:  20,280
;      REFERENCE/DOCKET NUMBER:  6530-010
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (212) 790-9090
;      TELEFAX:  (212) 869-9741/8864
;      TELEX:  66141 PENNIE
;  INFORMATION FOR SEQ ID NO:  18:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  860 base pairs
;      TYPE:  nucleic acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  cDNA
;    HYPOTHETICAL:  NO
;    ANTI-SENSE:  NO
;    ORIGINAL SOURCE:
;      ORGANISM:  hazel (Corylus sp.)
;    IMMEDIATE SOURCE:
;      LIBRARY:  POLLEN FROM ALLERGON AB, ENGELHOLM, SWEDEN
US-07-847-010-18


  Query Match             71.7%;  Score 344;  DB 2;  Length 860;
  Best Local Similarity   82.3%;  Pred. No. 3.6e-102;
  Matches  395;  Conservative    0;  Mismatches   85;  Indels    0;  Gaps    0;

Qy       1 ggtgtgtttaattatgagactgagaccacctctgttatcccagcagctcgactgttcaag 60
           ||||| || ||||| |||  ||||||| |||| |||||| |||| ||  | |||||||||
Db       4 GGTGTTTTCAATTACGAGGTTGAGACCCCCTCCGTTATCTCAGCGGCAAGGCTGTTCAAG 63

Qy      61 gcctttatccttgatggcgataacctctttccaaaggttgcaccccaagccattagcagt 120
             ||| | ||||||||||||||||| ||| | |||||||||||||| ||||| |||| |||
Db      64 TCCTATGTCCTTGATGGCGATAAGCTCATCCCAAAGGTTGCACCTCAAGCTATTACCAGC 123

Qy     121 gttgaaaacattgaaggaaatggagggcctggaaccattaagaagatcagctttcccgaa 180
           ||||||||| ||| ||||||||||||||||||||||| ||||| |||| ||||  ||||
Db     124 GTTGAAAACGTTGGAGGAAATGGAGGGCCTGGAACCATCAAGAATATCACCTTTGGCGAA 183
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Qy    181 ggcctccctttcaagtacgtgaaggacagagttgatgaggtggaccacacaaacttcaaa 240
          |||  || || ||||||||||||||| || |||||||||| ||| ||||||||||||||
Db    184 GGCAGCCGTTACAAGTACGTGAAGGAGAGGGTTGATGAGGTTGACAACACAAACTTCAAA 243

Qy    241 tacaattacagcgtgatcgagggcggtcccataggcgacacattggagaagatctccaac 300
          || |  |||| |||||||||||| | |  | | || ||||   |||||||  ||| || |
Db    244 TATAGCTACACCGTGATCGAGGGTGATGTCCTGGGTGACAAGCTGGAGAAAGTCTGCAGC 303

Qy    301 gagataaagatagtggcaacccctgatggaggatccatcttgaagatcagcaacaagtac 360
          ||| | |||||||||||| |||||| ||| |||||||| |||||||||||||| ||||| |
Db    304 GAGCTGAAGATAGTGGCAGCCCCTGGTGGGGGATCCACCTTGAAGATCAGCAGCAAGTTC 363

Qy    361 cacaccaaaggtgaccatgaggtgaaggcagagcaggttaaggcaagtaaagaaatgggc 420
          ||| |||||||||||||||| | || |||||| || | ||||     |||||||||| |
Db    364 CACGCCAAAGGTGACCATGAGATTAATGCAGAGGAGATGAAGGGTGCCAAAGAAATGGCC 423

Qy    421 gagacacttttgagggccgttgagagctacctcttggcacactccgatgcctacaactaa 480
          |||| |||||| ||||| ||||||| |||||| |||||||||| | ||  |||||||||
Db    424 GAGAAACTTTTAAGGGCGGTTGAGACCTACCTATTGGCACACTCTGCTGAATACAACTAA 483
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RESULT  11
US-07-847-010-10
; Sequence 10, Application US/07847010
; Patent No. 5693495
;  GENERAL INFORMATION:
;    APPLICANT:  Breiteneder, Heimo
;    APPLICANT:  Reikerstorfer, Arnold
;    APPLICANT:  Valenta, Rudolf
;    APPLICANT:  Hoffmann - Sommergruber, Karin
;    APPLICANT:  Breitenbach, Michael
;    APPLICANT:  Kraft, Dietrich
;    APPLICANT:  Rumpold, Helmut
;    APPLICANT:  Scheiner, Otto
;    APPLICANT:  Ebner, Christof
;    APPLICANT:  Ferreira, Fatima
;    TITLE OF INVENTION:  Allergens of Alder Pollen and
;    TITLE OF INVENTION:  Applications Thereof
;    NUMBER OF SEQUENCES:  23
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Pennie & Edmonds
;      STREET:  1155 Avenue of the Americas
;      CITY:  New York
;      STATE:  New York
;      COUNTRY:  U.S.A.
;      ZIP:  10036-2711
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/07/847,010
;      FILING DATE:  01-JUN-1992
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Jones III, Harry C
;      REGISTRATION NUMBER:  20,280
;      REFERENCE/DOCKET NUMBER:  6530-010
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (212) 790-9090
;      TELEFAX:  (212) 869-9741/8864
;      TELEX:  66141 PENNIE
;  INFORMATION FOR SEQ ID NO:  10:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  480 base pairs
;      TYPE:  nucleic acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  cDNA
;    HYPOTHETICAL:  NO
;    ANTI-SENSE:  NO
;    ORIGINAL SOURCE:
;      ORGANISM:  hazel (Corylus sp.)
;    IMMEDIATE SOURCE:
;      LIBRARY:  POLLEN FROM ALLERGON AB, ENGELHOLM, SWEDEN
US-07-847-010-10


  Query Match             71.4%;  Score 342.6;  DB 2;  Length 480;
  Best Local Similarity   82.4%;  Pred. No. 7.4e-102;
  Matches  393;  Conservative    0;  Mismatches   84;  Indels    0;  Gaps    0;

Qy      1 ggtgtgtttaattatgagactgagaccacctctgttatcccagcagctcgactgttcaag 60
          ||||| || ||||| |||  ||||||  |||| |||||||| || ||  | |||||||||
Db      4 GGTGTTTTCAATTACGAGGTTGAGACTCCCTCCGTTATCCCTGCGGCAAGGCTGTTCAAG 63

Qy     61 gcctttatccttgatggcgataacctctttccaaaggttgcaccccaagccattagcagt 120
            ||| | |||||||||||||||| ||| | |||||||||||||| ||||| |||| |||
Db     64 TCCTATGTCCTTGATGGCGATAAGCTCATCCCAAAGGTTGCACCTCAAGCTATTACCAGC 123

Qy    121 gttgaaaacattgaaggaaatggagggcctggaaccattaagaagatcagctttcccgaa 180
          |||||||||| |||||||||||||||||||||||||||||| ||||| |||| ||||  ||||
Db    124 GTTGAAAACGTTGAAGGAAATGGAGGGCCTGGAACCATCAAGAATATCACCTTTGGCGAA 183

Qy    181 ggcctccctttcaagtacgtgaaggacagagttgatgaggtggaccacacaaacttcaaa 240
          |||  || || |||||||||||||| || |||||||||| ||| |||||||||||| |
Db    184 GGCAGCCGTTACAAGTACGTGAAGGAGAGGGTTGATGAGGTTGACAACACAAACTTCACA 243

Qy    241 tacaattacagcgtgatcgagggcggtcccataggcgacacattggagaagatctccaac 300
          ||||  |||| |||||||||||| | |  | | || ||||   |||||||| ||| | ||
Db    244 TACAGCTACACCGTGATCGAGGGTGATGTCCTGGGTGACAAGCTGGAGAAGGTCTGCCAC 303

Qy    301 gagataaagatagtggcaacccctgatggaggatccatcttgaagatcagcaacaagtac 360
          ||| | |||||||||||| |||||| |||||||||||||||||||||||||||| ||||| |
Db    304 GAGCTGAAGATAGTGGCAGCCCCTGGTGGAGGATCCATCTTGAAGATCAGCAGCAAGTTC 363

Qy    361 cacaccaaaggtgaccatgaggtgaaggcagagcaggttaaggcaagtaaagaaatgggc 420
          ||| ||||||| ||||||||| | || |||||| || | ||||     |||||||||
Db    364 CACGCCAAAGGCGACCATGAGATTAATGCAGAGGAGATGAAGGGTGCCAAAGAAATGGCA 423

Qy    421 gagacacttttgagggccgttgagagctacctcttggcacactccgatgcctacaac 477
          |||| |||||| ||||| ||||||| |||||| |||||||||||| | ||  ||||||
Db    424 GAGAAACTTTTAAGGGCGGTTGAGACCTACCTATTGGCACACTCTGCTGAATACAAC 480


RESULT  12
US-07-847-010-19
; Sequence 19, Application US/07847010
; Patent No. 5693495
;  GENERAL INFORMATION:
;    APPLICANT:  Breiteneder, Heimo
;    APPLICANT:  Reikerstorfer, Arnold
;    APPLICANT:  Valenta, Rudolf
;    APPLICANT:  Hoffmann - Sommergruber, Karin
;    APPLICANT:  Breitenbach, Michael
;    APPLICANT:  Kraft, Dietrich
;    APPLICANT:  Rumpold, Helmut
;    APPLICANT:  Scheiner, Otto
;    APPLICANT:  Ebner, Christof
;    APPLICANT:  Ferreira, Fatima
;    TITLE OF INVENTION:  Allergens of Alder Pollen and
;    TITLE OF INVENTION:  Applications Thereof
;    NUMBER OF SEQUENCES:  23
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Pennie & Edmonds
;      STREET:  1155 Avenue of the Americas
;      CITY:  New York
;      STATE:  New York
;      COUNTRY:  U.S.A.
;      ZIP:  10036-2711
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
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;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/07/847,010
;      FILING DATE:  01-JUN-1992
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Jones III, Harry C
;      REGISTRATION NUMBER:  20,280
;      REFERENCE/DOCKET NUMBER:  6530-010
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (212) 790-9090
;      TELEFAX:  (212) 869-9741/8864
;      TELEX:  66141 PENNIE
;  INFORMATION FOR SEQ ID NO:  19:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  480 base pairs
;      TYPE:  nucleic acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  cDNA
;    HYPOTHETICAL:  NO
;    ANTI-SENSE:  NO
;    ORIGINAL SOURCE:
;      ORGANISM:  hazel (Corylus sp.)
;    IMMEDIATE SOURCE:
;      LIBRARY:  POLLEN FROM ALLERGON AB, ENGELHOLM, SWEDEN
US-07-847-010-19


  Query Match             71.0%;  Score 341;  DB 2;  Length 480;
  Best Local Similarity   82.2%;  Pred. No. 2.5e-101;
  Matches  392;  Conservative    0;  Mismatches   85;  Indels    0;  Gaps    0;

Qy       1 ggtgtgtttaattatgagactgagaccacctctgttatcccagcagctcgactgttcaag 60
Db       4 GGTGTTTTCAATTACGAGGTTGAGACCCCCTCCGTTATCTCAGCGGCAAGGCTGTTCAAG 63

Qy      61 gcctttatccttgatggcgataacctctttccaaaggttgcaccccaagccattagcagt 120
Db      64 TCCTATGTCCTTGATGGCGATAAGCTCATCCCAAAGGTTGCACCTCAAGCTATTACCAGC 123

Qy     121 gttgaaaacattgaaggaaatggagggcctggaaccattaagaagatcagctttcccgaa 180
Db     124 GTTGAAAACGTTGGAGGAAATGGAGGGCCTGGAACCATCAAGAATATCACCTTTGGCGAA 183

Qy     181 ggcctccctttcaagtacgtgaaggacagagttgatgaggtggaccacacaaacttcaaa 240
Db     184 GGCAGCCGTTACAAGTACGTGAAGGAGAGGGTTGATGAGGTTGACAACACAAACTTCAAA 243

Qy     241 tacaattacagcgtgatcgagggcggtcccataggcgacacattggagaagatctccaac 300
Db     244 TATAGCTACACCGTGATCGAGGGTGATGTCCTGGGTGACAAGCTGGAGAAAGTCTGCAGC 303

Qy     301 gagataaagatagtggcaacccctgatggaggatccatcttgaagatcagcaacaagtac 360
Db     304 GAGCTGAAGATAGTGGCAGCCCCTGGTGGGGGATCCACCTTGAAGATCAGCAGCAAGTTC 363

Qy     361 cacaccaaaggtgaccatgaggtgaaggcagagcaggttaaggcaagtaaagaaatgggc 420
Db     364 CACGCCAAAGGTGACCATGAGATTAATGCAGAGGAGATGAAGGGTGCCAAAGAAATGGCC 423

Qy     421 gagacactttgagggccgttgagagctacctcttggcacactccgatgcctacaac 477
Db     424 GAGAAACTTTTAAGGGCGGTTGAGACCTACCTATTGGCACACTCTGCTGAATACAAC 480


RESULT  13
US-08-363-010-3
; Sequence 3, Application US/08363010
; Patent No. 5512484
;  GENERAL INFORMATION:
;    APPLICANT:  Yamamoto, Mika
;    APPLICANT:  Oheda, Kenji
;    TITLE OF INVENTION:  CARROT 16 KD PROTEIN, GENE CODING FOR
;    TITLE OF INVENTION:  SAID PROTEIN AND PLASMID CONTAINING SAID GENE
;    NUMBER OF SEQUENCES:  6
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Birch, Stewart, Kolasch & Birch, LLP
;      STREET:  8110 Gatehouse Road, Suite 500 East
;      CITY:  Falls Church
;      STATE:  Virginia
;      COUNTRY:  U.S.A.
;      ZIP:  22042
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.30
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/363,010
;      FILING DATE:  23-DEC-1994
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Svensson, Leonard R.
;      REGISTRATION NUMBER:  30,330
;      REFERENCE/DOCKET NUMBER:  20-3628P
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (703) 205-8000
;      TELEFAX:  (703) 205-8050
;      TELEX:  248345
;  INFORMATION FOR SEQ ID NO:  3:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  739 base pairs
;      TYPE:  nucleic acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  cDNA
;    HYPOTHETICAL:  NO
;    ANTI-SENSE:  NO
;    ORIGINAL SOURCE:
;      ORGANISM:  Daucus carota
;      STRAIN:  Kuroda Gosun
US-08-363-010-3


  Query Match             26.7%;  Score 128;  DB 1;  Length 739;
  Best Local Similarity   56.9%;  Pred. No. 3.6e-32;
  Matches  255;  Conservative    0;  Mismatches  190;  Indels    3;  Gaps    1;

Qy      22 gagaccacctctgttatcccagcagctcgactgttcaaggcctttatccttgatggcgat 81
Db      38 GAGATCACTTCTTCAGTCTCCGCAGAGAAAATATTCAGCGGCATTGTCCTTGATGTTGAT 97

Qy      82 aacctctttccaaaggttgcaccccaagccattagcagtgttgaaaacattgaaggaaat 141
Db      98 ACAGTTATTCCCAAGGCTGCCCCCGGAGCTTACAAGAGTGTCGATG---TTAAAGGAGAC 154

Qy     142 ggagggcctggaaccattaagaagatcagctttcccgaaggcctccctttcaagtacgtg 201
Db     155 GGTGGAGCTGGAACCGTCAGAATTATCACCCTTCCCGAAGGTAGCCCAATCACCTCAATG 214

Qy     202 aaggacagagttgatgaggtggaccacacaaacttcaaatacaattacagcgtgatcgag 261
Db     215 ACGGTTAGGACTGATGCAGTGAACAAGGAGGCCTTGACATACGATTCCACAGTCATTGAT 274

Qy     262 ggcggtcccataggcgacacattggagaagatctccaacgagataaagatagtggcaacc 321
Db     275 GGAGACATCCTTCTAGAATTCATCGAATCCATTGAAACCCATATGGTAGTTGTGCCAACT 334

Qy     322 cctgatggaggatccatcttgaagatcagcaacaagtaccacaccaaaggtgaccatgag 381
Db     335 GCTGACGGAGGTAGCATTACCAAGACCACTGCCATATTCCACACCAAAGGCGATGCCGTG 394

Qy     382 gtgaaggcagagcaggttaaggcaagtaaagaaatgggcgagacactttgagggccgtt 441
Db     395 GTTCCTGAGGAGAACATCAAGTTTGCAGATGCTCAGAACACTGCTCTTTTCAAGGCTATT 454
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Qy    442 gagagctacctcttggcacactccgatg 469
          |||  ||||||| | ||  | |  | ||
Db    455 GAGGCCTACCTCATTGCTAATTAAGCTG 482


RESULT  14
US-08-363-010-2
; Sequence 2, Application US/08363010
; Patent No. 5512484
;  GENERAL INFORMATION:
;    APPLICANT:  Yamamoto, Mika
;    APPLICANT:  Oheda, Kenji
;    TITLE OF INVENTION:  CARROT 16 KD PROTEIN, GENE CODING FOR
;    TITLE OF INVENTION:  SAID PROTEIN AND PLASMID CONTAINING SAID GENE
;    NUMBER OF SEQUENCES:  6
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Birch, Stewart, Kolasch & Birch, LLP
;      STREET:  8110 Gatehouse Road, Suite 500 East
;      CITY:  Falls Church
;      STATE:  Virginia
;      COUNTRY:  U.S.A.
;      ZIP:  22042
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.30
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/363,010
;      FILING DATE:  23-DEC-1994
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Svensson, Leonard R.
;      REGISTRATION NUMBER:  30,330
;      REFERENCE/DOCKET NUMBER:  20-3628P
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (703) 205-8000
;      TELEFAX:  (703) 205-8050
;      TELEX:  248345
;  INFORMATION FOR SEQ ID NO:  2:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  465 base pairs
;      TYPE:  nucleic acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  cDNA
;    HYPOTHETICAL:  NO
;    ANTI-SENSE:  NO
;    ORIGINAL SOURCE:
;      ORGANISM:  Daucus carota
;      STRAIN:  Kuroda Gosun
US-08-363-010-2


  Query Match             26.4%;  Score 126.8;  DB 1;  Length 465;
  Best Local Similarity   57.0%;  Pred. No. 6.9e-32;
  Matches  252;  Conservative    0;  Mismatches  187;  Indels    3;  Gaps    1;

Qy     22 gagaccacctctgttatcccagcagctcgactgttcaaggcctttatccttgatggcgat 81
          |||| ||| |||    || | ||||    | | ||||  | | || |||||||||  |||
Db     25 GAGATCACTTCTTCAGTCTCCGCAGAGAAAATATTCAGCGGCATTGTCCTTGATGTTGAT 84

Qy     82 aacctctttccaaaggttgcaccccaagccattagcagtgttgaaaacattgaaggaaat 141
          |   |  |||| |||| ||| |||  |||    |  ||||| ||     || ||||| |
Db     85 ACAGTTATTCCCAAGGCTGCCCCCGGAGCTTACAAGAGTGTCGATG---TTAAAGGAGAC 141

Qy    142 ggagggcctggaaccattaagaagatcagctttcccgaaggcctccctttcaagtacgtg 201
          || ||  |||||||| | |  |  |||| | ||||||||||   |||  |||  |   ||
Db    142 GGTGGAGCTGGAACCGTCAGAATTATCACCCTTCCCGAAGGTAGCCCAATCACCTCAATG 201

Qy    202 aaggacagagttgatgaggtggaccacacaaacttcaaatacaattacagcgtgatcgag 261
          | ||  ||   |||||  ||| || |      ||| | |||| ||| ||  || || ||
Db    202 ACGGTTAGGACTGATGCAGTGAACAAGGAGGCCTTGACATACGATTCCACAGTCATTGAT 261

Qy    262 ggcggtcccataggcgacacattggagaagatctccaacgagataaagatagtggcaacc 321
          || |   | |    ||     | ||    ||    | | | ||     | ||| ||||
Db    262 GGAGACATCCTTCTAGAATTCATCGAATCCATTGAAACCCATATGGTAGTTGTGCCAACT 321

Qy    322 cctgatggaggatccatcttgaagatcagcaacaagtaccacaccaaaggtgaccatgag 381
          |||| |||||   |||    |||| ||    ||  | ||||||||||||| ||    | |
Db    322 GCTGACGGAGGTAGCATTACCAAGACCACTGCCATATTCCACACCAAAGGCGATGCCGTG 381

Qy    382 gtgaaggcagagcaggttaaggcaagtaaagaaatgggcgagacacttttgagggccgtt 441
          ||    | ||| |  | |||       | |    |  |    | ||||| | |||  ||
Db    382 GTTCCTGAGGAGAACATCAAGTTTGCAGATGCTCAGAACACTGCTCTTTTCAAGGCTATT 441

Qy    442 gagagctacctcttggcacact 463
          |||  ||||||| | ||  | |
Db    442 GAGGCCTACCTCATTGCTAATT 463


RESULT  15
5312912-1
;Patent No. 5312912
;    APPLICANT: HADWIGER, LEE A.;CHIANG, CHIN C.;HOROVITZ,
;DANIEL A.
;    TITLE OF INVENTION: PROCEDURES AND REGULATORY DNA SEQUENCES
;FOR GENETICALLY ENGINEERING DISEASE RESISTANCE AND OTHER
;INDUCIBLE TRAITS IN PLANTS
;    NUMBER OF SEQUENCES: 9
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/07/393,301
;      FILING DATE: 13-JUN-1989
;SEQ ID NO:1:
;      LENGTH: 2290
5312912-1


  Query Match             18.2%;  Score 87.4;  DB 7;  Length 2290;
  Best Local Similarity   56.4%;  Pred. No. 9.7e-19;
  Matches  163;  Conservative    0;  Mismatches  126;  Indels    0;  Gaps    0;

Qy    192 caagtacgtgaaggacagagttgatgaggtggaccacacaaacttcaaatacaattacag 251
          |||||| |||    ||| ||| ||    || ||  |  | ||||    | |||| |||||
Db   1430 caagtatgtgttacacaaagtggagttagtagatgatgctaactgggcaaacaactacag 1489

Qy    252 cgtgatcgagggcggtcccataggcgacacattggagaagatctccaacgagataaagat 311
          | |  | |  || | |    |    |||||| | ||||||||||||    |||   ||  |
Db   1490 catagttggaggtgttggacttccggacacagttgagaagatctcgtttgaggctaaatt 1549

Qy    312 agtggcaacccctgatggaggatccatcttgaagatcagcaacaagtaccacaccaaagg 371
          |||   ||  |||||||||||||    ||| | ||    || ||  | ||||||||
Db   1550 gtctgcaggaccaaatggaggatccattgcaaagctgagtgtgaaatattataccaaagg 1609

Qy    372 tgaccatgaggtgaaggcagagcaggttaaggcaagtaaagaaatgggcgagacactttt 431
          |||   |      |  | |||| |  | |||    | ||||  |  || ||    ||||
Db   1610 tgatgctattcctagtgaagaggaaatcaagaatggcaaagccaaaggtgaaggtatttt 1669

Qy    432 gagggccgttgagagctacctcttggcacactccgatgcctacaactaa 480
          | |||  ||||  | |||    ||||  |  | |||  | || |  ||
Db   1670 caaggctcttgaaggttactgtgtggctaatcctgattacaactaaaaa 1718


Search completed: December 11, 2000, 15:57:10
Job time: 19997 sec
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GenCore version 4.5


OM protein - protein search, using sw model

Run on: December 11, 2000, 09:41:43 ; Search time 508.71 Seconds
(without alignments)
19.835 Million cell updates/sec

Title: US-09-270-910-37
Perfect score: 819
Sequence: 1 GVFNYETETTSVIPAARLFK.....GETLLRAVESYLLAHSDAYN 159

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 182106 seqs, 63460219 residues

Total number of hits satisfying chosen parameters: 182106

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : PIR_65:*
1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

| Result No. | Score | % Query Match | Length | DB | ID | Description |
|---|---|---|---|---|---|---|
| 1 | 815 | 99.5 | 160 | 2 | S05376 | major pollen aller |
| 2 | 795 | 97.1 | 160 | 2 | G55699 | major pollen aller |
| 3 | 790 | 96.5 | 160 | 2 | D55699 | major pollen aller |
| 4 | 789 | 96.3 | 160 | 2 | E55699 | major pollen aller |
| 5 | 787 | 96.1 | 160 | 2 | C55699 | major pollen aller |
| 6 | 786 | 96.0 | 160 | 2 | F55699 | major pollen aller |
| 7 | 780 | 95.2 | 160 | 2 | I55699 | major pollen aller |
| 8 | 740 | 90.4 | 160 | 2 | A57427 | major pollen aller |
| 9 | 734 | 89.6 | 160 | 2 | A55699 | major pollen aller |
| 10 | 730 | 89.1 | 160 | 2 | H55699 | major pollen aller |
| 11 | 722 | 88.2 | 160 | 2 | B55699 | major pollen aller |
| 12 | 707 | 86.3 | 160 | 2 | S47250 | gene 1-Sc1 protein |
| 13 | 703 | 85.8 | 159 | 2 | S47251 | gene 1 Sc2 protein |
| 14 | 621 | 75.8 | 160 | 2 | S30054 | major allergen Cor |
| 15 | 621 | 75.8 | 160 | 2 | S30055 | major allergen Cor |
| 16 | 615 | 75.1 | 160 | 2 | S30053 | major allergen Cor |
| 17 | 612 | 74.7 | 160 | 2 | S47249 | gene 1-Sc3 protein |
| 18 | 601 | 73.4 | 160 | 2 | S30056 | major allergen Cor |
| 19 | 545 | 66.5 | 160 | 2 | T17005 | major allergen Mal |
| 20 | 534 | 65.2 | 160 | 2 | T17006 | major allergen Mal |
| 21 | 530 | 64.7 | 160 | 2 | T17007 | major allergen Mal |
| 22 | 505.5 | 61.7 | 159 | 2 | T17004 | major allergen Mal |
| 23 | 465.5 | 56.8 | 159 | 2 | JC4276 | major allergen Mal |
| 24 | 447.5 | 54.6 | 153 | 2 | S51119 | MalD1 protein - ap |
| 25 | 420.5 | 51.3 | 157 | 2 | T09659 | pathogenesis-relat |
| 26 | 415.5 | 50.7 | 157 | 2 | T09526 | stress response ge |
| 27 | 386 | 47.1 | 158 | 2 | T06527 | pathogenesis-relat |
| 28 | 382 | 46.6 | 158 | 2 | S42650 | pathogenesis-relat |
| 29 | 381 | 46.5 | 158 | 2 | S20518 | hypothetical prote |
| 30 | 374.5 | 45.7 | 159 | 2 | T06768 | disease resistance |
| 31 | 371 | 45.3 | 158 | 2 | S47140 | pathogenesis-relat |
| 32 | 370 | 45.2 | 156 | 1 | SNFB1 | pathogenesis-relat |
| 33 | 367 | 44.8 | 155 | 2 | S52664 | pathogenesis-relat |
| 34 | 367 | 44.8 | 158 | 2 | S20517 | hypothetical prote |
| 35 | 362.5 | 44.3 | 155 | 1 | SNFB2 | pathogenesis-rela |
| 36 | 362.5 | 44.3 | 155 | 2 | T11670 | pathogenesis relat |
| 37 | 342.5 | 41.8 | 155 | 2 | S35162 | STH-21 protein - p |
| 38 | 342.5 | 41.8 | 155 | 2 | S35161 | STH-2 protein - po |
| 39 | 332.5 | 40.6 | 157 | 2 | S42649 | pathogenesis-relat |
| 40 | 330.5 | 40.4 | 158 | 2 | S12568 | pathogenesis-relat |
| 41 | 317 | 38.7 | 178 | 2 | T07403 | TSI-1 protein - to |
| 42 | 316 | 38.6 | 155 | 2 | S04552 | pathogenesis-relat |
| 43 | 312 | 38.1 | 155 | 2 | S04553 | pathogenesis-relat |
| 44 | 310.5 | 37.9 | 154 | 2 | S63984 | major allergen Api |
| 45 | 302 | 36.9 | 155 | 2 | T14918 | pathogenesis-relat |

ALIGNMENTS

RESULT 1
S05376
major pollen allergen Bet v 1 - European white birch
C;Species: Betula pendula (European white birch)
C;Date: 31-Mar-1990 #sequence_revision 31-Mar-1990 #text_change 04-Feb-2000
C;Accession: S05376; JC4834; B53288
R;Breiteneder, H.; Pettenburger, K.; Bito, A.; Valenta, R.; Kraft, D.; Rumpold, H.; S
EMBO J. 8, 1935-1938, 1989
A;Title: The gene coding for the major birch pollen allergen BetvI, is highly homolog
A;Reference number: S05376; MUID:90005395
A;Accession: S05376
A;Molecule type: mRNA
A;Residues: 1-160 <BRE>
A;Cross-references: EMBL:X15877; NID:g17937; PIDN:CAA33887.1; PID:g17938
R;Kungl, A.J.; Susani, M.; Lindemann, A.; Machius, M.; Visser, A.J.W.G.; Scheiner, O.
Biochem. Biophys. Res. Commun. 223, 187-192, 1996
A;Title: Evidence for an alpha helical T cell epitope in the C-terminus of the main b
A;Reference number: JC4834; MUID:96254050
A;Accession: JC4834
A;Status: nucleic acid sequence not shown
A;Molecule type: mRNA
A;Residues: 1-160 <KUN>
R;Ipsen, H.; Hansen, O.C.
Mol. Immunol. 28, 1279-1288, 1991
A;Title: The NH2-terminal amino acid sequence of the immunochemically partial identic
s) Car b I and oak (Quercus alba) Que a I pollens.
A;Reference number: A53288; MUID:92072607
A;Accession: B53288
A;Status: preliminary
A;Molecule type: protein
A;Residues: 2-39,'XX',42-44 <IPS>
A;Cross-references: PID:g239734; PIDN:AAB20452.1
A;Experimental source: pollen
A;Note: sequence extracted from NCBI backbone (NCBIP:68408)
A;Note: the source is designated as Betula verrucosa
C;Comment: This protein induces IgE synthesis by B cells in a T cell dependent manner
C;Superfamily: pathogenesis-related protein
C;Keywords: pollen
F;2-160/Product: major pollen allergen Bet v 1 #status experimental <MAT>

Query Match 99.5%; Score 815; DB 2; Length 160;
Best Local Similarity 99.4%; Pred. No. 2.2e-64;
Matches 158; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

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Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
           |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       2 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 61

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      62 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 121
```

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Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           |||||||||||||||||||||||||||||||||||||||||
Db     122 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 160
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RESULT 2
G55699
major pollen allergen Bet v 1j - European white birch
C;Species: Betula pendula (European white birch)
C;Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 20-Aug-1999
C;Accession: G55699; S41902
R;Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheiner, ch, M.
J. Biol. Chem. 270, 2607-2613, 1995
A;Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chroma
A;Reference number: A55699; MUID:95155322
A;Accession: G55699
A;Molecule type: mRNA
A;Residues: 1-160 <SWO>
A;Cross-references: EMBL:X77271; NID:g452739; PIDN:CAA54487.1; PID:g452740
A;Note: the source is designated as Betula verrucosa
C;Superfamily: pathogenesis-related protein
C;Keywords: pollen
F;2-160/Product: major pollen allergen Bet v 1j #status experimental <MAT>

Query Match 97.1%; Score 795; DB 2; Length 160;
Best Local Similarity 95.6%; Pred. No. 1.2e-62;
Matches 152; Conservative 5; Mismatches 2; Indels 0; Gaps 0;

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Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
           |||||||| ||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       2 GVFNYETEATSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 61

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
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Db      62 GFPFKYVKDRVDEVDHTNFKYSYSVIEGGPVGDTLEKISNEIKIVATPNGGSILKINNKY 121

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           |||||||||||:||||||||||||||||||||||||||||
Db     122 HTKGDHEVKAEQIKASKEMGETLLRAVESYLLAHSDAYN 160
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RESULT 3
D55699
major pollen allergen Bet v 1e - European white birch
C;Species: Betula pendula (European white birch)
C;Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 20-Aug-1999
C;Accession: D55699; S41899
R;Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheiner, ch, M.
J. Biol. Chem. 270, 2607-2613, 1995
A;Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chroma
A;Reference number: A55699; MUID:95155322
A;Accession: D55699
A;Molecule type: mRNA
A;Residues: 1-160 <SWO>
A;Cross-references: EMBL:X77267; NID:g452733; PIDN:CAA54483.1; PID:g452734
A;Note: the source is designated as Betula verrucosa
C;Superfamily: pathogenesis-related protein
C;Keywords: pollen
F;2-160/Product: major pollen allergen Bet v 1e #status experimental <MAT>

Query Match 96.5%; Score 790; DB 2; Length 160;
Best Local Similarity 95.0%; Pred. No. 3.4e-62;
Matches 151; Conservative 6; Mismatches 2; Indels 0; Gaps 0;

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Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
           |||||||| ||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       2 GVFNYETEATSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 61

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           |:|||||| ||||||||||:||||||||:||||||||||||||||:|||||||:|||
Db      62 GIPFKYVKGRVDEVDHTNFKYSYSVIEGGPVGDTLEKISNEIKIVATPNGGSILKINNKY 121

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           |||||||||||:||||||||||||||||||||||||||||
Db     122 HTKGDHEVKAEQIKASKEMGETLLRAVESYLLAHSDAYN 160
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RESULT 4
E55699
major pollen allergen Bet v 1f/i - European white birch
C;Species: Betula pendula (European white birch)
C;Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 20-Aug-1999
C;Accession: E55699; S41905; S41900
R;Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheiner, ch, M.
J. Biol. Chem. 270, 2607-2613, 1995
A;Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chr
A;Reference number: A55699; MUID:95155322
A;Accession: E55699
A;Molecule type: mRNA
A;Residues: 1-160 <SWO>
A;Cross-references: EMBL:X77268; NID:g452735; PIDN:CAA54484.1; PID:g452736
A;Note: the source is designated as Betula verrucosa
R;Swoboda, I.; Jilek, A.; Ferreira, F.; Vicente, O.; Hoffman-Sommergruber, K.; Heberl
submitted to the EMBL Data Library, January 1994
A;Reference number: S41896
A;Accession: S41905
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-160 <SW2>
A;Cross-references: EMBL:X77274; NID:g452745; PIDN:CAA54490.1; PID:g452746
A;Note: the source is designated as Betula verrucosa
C;Superfamily: pathogenesis-related protein
C;Keywords: pollen
F;2-160/Product: major pollen allergen Bet v 1f/i #status experimental <MAT>

Query Match 96.3%; Score 789; DB 2; Length 160;
Best Local Similarity 95.0%; Pred. No. 4.1e-62;
Matches 151; Conservative 5; Mismatches 3; Indels 0; Gaps 0;

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Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
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Db       2 GVFNYEIEATSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 61

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | ||||||||||||||||||:||||||||:||||||||||||||||:|||||||:|||
Db      62 GFPFKYVKDRVDEVDHTNFKYSYSVIEGGPVGDTLEKISNEIKIVATPNGGSILKINNKY 121

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           |||||||||||:||||||||||||||||||||||||||||
Db     122 HTKGDHEVKAEQIKASKEMGETLLRAVESYLLAHSDAYN 160
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RESULT 5
C55699
major pollen allergen Bet v 1d/h - European white birch
C;Species: Betula pendula (European white birch)
C;Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 20-Aug-1999
C;Accession: C55699; S41901; S41898
R;Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheiner, ch, M.
J. Biol. Chem. 270, 2607-2613, 1995
A;Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid ch
A;Reference number: A55699; MUID:95155322
A;Accession: C55699
A;Molecule type: mRNA
A;Residues: 1-160 <SWO>
A;Cross-references: EMBL:X77266; NID:g452731; PIDN:CAA54482.1; PID:g452732
A;Note: the source is designated as Betula verrucosa
R;Swoboda, I.; Jilek, A.; Ferreira, F.; Vicente, O.; Hoffmann-Sommergruber, K.; Heberl

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submitted to the EMBL Data Library, January 1994
A;Reference number: S41896
A;Accession: S41901
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-160 <SW2>
A;Cross-references: EMBL:X77270; NID:g452737; PIDN:CAA54486.1; PID:g452738
A;Note: the source is designated as Betula verrucosa
C;Superfamily: pathogenesis-related protein
C;Keywords: pollen
F;2-160/Product: major pollen allergen Bet v 1d/h #status experimental <MAT>
F;83/Binding site: carbohydrate (Asn) (covalent) #status absent


  Query Match             96.1%;  Score 787;  DB 2;  Length 160;
  Best Local Similarity   95.0%;  Pred. No. 6.2e-62;
  Matches  151;  Conservative    4;  Mismatches    4;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
           |||||| |||||||||||||||||||||| |||||||||||||||||||||||||:|||
Db       2 GVFNYEIETTSVIPAARLFKAFILDGDNLVPKVAPQAISSVENIEGNGGPGTIKKINFPE 61

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | |||||||||||||||||||||||||||:||||||||||||||||||| :|||||||
Db      62 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPVGDTLEKISNEIKIVATPDGGCVLKISNKY 121

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           ||||:|||||||||||||||||||||||||||||||||||
Db     122 HTKGNHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 160


RESULT   6
F55699
major pollen allergen Bet v 1g - European white birch
C;Species: Betula pendula (European white birch)
C;Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 20-Aug-1999
C;Accession: F55699; S41896
R;Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheiner,
ch, M.
J. Biol. Chem. 270, 2607-2613, 1995
A;Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chroma
A;Reference number: A55699; MUID:95155322
A;Accession: F55699
A;Molecule type: mRNA
A;Residues: 1-160 <SWO>
A;Cross-references: EMBL:X77269; NID:g452727; PIDN:CAA54485.1; PID:g452728
A;Note: the source is designated as Betula verrucosa
C;Superfamily: pathogenesis-related protein
C;Keywords: pollen
F;2-160/Product: major pollen allergen Bet v 1g #status experimental <MAT>
F;83/Binding site: carbohydrate (Asn) (covalent) #status absent


  Query Match             96.0%;  Score 786;  DB 2;  Length 160;
  Best Local Similarity   94.3%;  Pred. No. 7.5e-62;
  Matches  150;  Conservative    6;  Mismatches    3;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
           ||||||:|||||||||||||||:|||| |||||||||||||||||||||||:|||
Db       2 GVFNYESETTSVIPAARLFKAFILEGDNLIPKVAPQAISSVENIEGNGGPGTIKKINFPE 61

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | |||||||||||||||||||||||||||:||||||||||||||||||| :|||||||
Db      62 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPVGDTLEKISNEIKIVATPDGGCVLKISNKY 121

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           ||||:|||||||||||||||||||||||||||||||||||
Db     122 HTKGNHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 160


RESULT   7
I55699
major pollen allergen Bet v 1l - European white birch
C;Species: Betula pendula (European white birch)
C;Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 20-Aug-1999
C;Accession: I55699; S41904
R;Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheine
ch, M.
J. Biol. Chem. 270, 2607-2613, 1995
A;Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chr
A;Reference number: A55699; MUID:95155322
A;Accession: I55699
A;Molecule type: mRNA
A;Residues: 1-160 <SWO>
A;Cross-references: EMBL:X77273; NID:g452743; PIDN:CAA54489.1; PID:g452744
A;Note: the source is designated as Betula verrucosa
C;Superfamily: pathogenesis-related protein
C;Keywords: pollen
F;2-160/Product: major pollen allergen Bet v 1l #status experimental <MAT>
F;83/Binding site: carbohydrate (Asn) (covalent) #status absent


  Query Match             95.2%;  Score 780;  DB 2;  Length 160;
  Best Local Similarity   93.7%;  Pred. No. 2.5e-61;
  Matches  149;  Conservative    5;  Mismatches    5;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
           |||||||| |||||||:|||||||| | ||||||||||||||||||||||:|||
Db       2 GVFNYETEATSVIPAARMFKAFILDGDKLVPKVAPQAISSVENIEGNGGPGTIKKINFPE 61

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | |||||||||||||||||||||||||||:|||||||||||||||||| :|||||||
Db      62 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPVGDTLEKISNEIKIVATPDGGCVLKISNKY 121

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
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Db     122 HTKGNHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 160


RESULT   8
A57427
major pollen allergen Bet v 1m/n - European white birch
C;Species: Betula pendula (European white birch)
C;Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 20-Aug-1999
C;Accession: A57427; S49450
R;Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheine
ch, M.
J. Biol. Chem. 270, 2607-2613, 1995
A;Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chr
A;Reference number: A55699; MUID:95155322
A;Accession: A57427
A;Molecule type: mRNA
A;Residues: 1-160 <SWO>
A;Cross-references: GB:X81972; NID:g807868; PIDN:CAA57497.1; PID:g551640
R;Engel, E.; Kraft, D.; Scheiner, O.; Breitenbach, M.; Ferreira, F.
submitted to the EMBL Data Library, October 1994
A;Description: Isoforms of BETV1, the major birch pollen allergen, analyzed by liquid
A;Reference number: S49450
A;Accession: S49450
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-160 <ENG>
A;Cross-references: EMBL:X82028; NID:g807869; PIDN:CAA57550.1; PID:g558561
A;Note: the source is designated as Betula verrucosa
C;Superfamily: pathogenesis-related protein
C;Keywords: pollen
F;2-160/Product: major pollen allergen Bet v 1m/n #status experimental <MAT>


  Query Match             90.4%;  Score 740;  DB 2;  Length 160;
  Best Local Similarity   89.3%;  Pred. No. 8e-58;
  Matches  142;  Conservative    8;  Mismatches    9;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
           ||||||:|||||||||||||||||||| |||||||||||||||||||||||:|||
Db       2 GVFNYESETTSVIPAARLFKAFILDGDNLIPKVAPQAISSVENIEGNGGPGTIKKITFPE 61
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Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | |||||||:||||||| ||||:||:|||| :||||||| ||||||||||||||||||||
Db      62 GSPFKYVKERVDEVDHANFKYSYSMIEGGALGDTLEKICNEIKIVATPDGGSILKISNKY 121

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           |||||||:||| :|| || || ||||||||||||||||
Db     122 HTKGDHEMKAEHMKAIKEKGEALLRAVESYLLAHSDAYN 160


RESULT   9
A55699
major pollen allergen Bet v 1b - European white birch
C;Species: Betula pendula (European white birch)
C;Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 20-Aug-1999
C;Accession: A55699; S41401
R;Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheiner,
ch, M.
J. Biol. Chem. 270, 2607-2613, 1995
A;Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chroma
A;Reference number: A55699; MUID:95155322
A;Accession: A55699
A;Molecule type: mRNA
A;Residues: 1-160 <SWO>
A;Cross-references: EMBL:X77200; NID:g450884; PIDN:CAA54421.1; PID:g450885
A;Note: the source is designated as Betula verrucosa
C;Superfamily: pathogenesis-related protein
C;Keywords: pollen
F;2-160/Product: major pollen allergen Bet v 1b #status experimental <MAT>


  Query Match             89.6%;  Score 734;  DB 2;  Length 160;
  Best Local Similarity   88.7%;  Pred. No. 2.7e-57;
  Matches  141;  Conservative    8;  Mismatches   10;  Indels    0;  Gaps    0;

Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
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Db      2 GVFNYETETTSVIPAARLFKAFILEGDTLIPKVAPQAISSVENIEGNGGPGTIKKITFPE 61

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | |||||:||||||| ||||:||:|||| :||||||| ||||||||||||||||||||
Db     62 GSPFKYVKERVDEVDHANFKYSYSMIEGGALGDTLEKICNEIKIVATPDGGSILKISNKY 121

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           |||||||:||| :|| || || ||||||||||||||||
Db    122 HTKGDHEMKAEHMKAIKEKGEALLRAVESYLLAHSDAYN 160


RESULT  10
H55699
major pollen allergen Bet v 1k - European white birch
C;Species: Betula pendula (European white birch)
C;Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 20-Aug-1999
C;Accession: H55699; S41903
R;Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheiner,
ch, M.
J. Biol. Chem. 270, 2607-2613, 1995
A;Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chroma
A;Reference number: A55699; MUID:95155322
A;Accession: H55699
A;Molecule type: mRNA
A;Residues: 1-160 <SWO>
A;Cross-references: EMBL:X77272; NID:g458478; PIDN:CAA54488.1; PID:g452742
A;Note: the source is designated as Betula verrucosa
C;Superfamily: pathogenesis-related protein
C;Keywords: pollen
F;2-160/Product: major pollen allergen Bet v 1k #status experimental <MAT>


  Query Match             89.1%;  Score 730;  DB 2;  Length 160;
  Best Local Similarity   88.1%;  Pred. No. 6e-57;
  Matches  140;  Conservative    9;  Mismatches   10;  Indels    0;  Gaps    0;

Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
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Db      2 GVFNYESETTSVIPAARLFKAFILEGDTLIPKVAPQAISSVENIEGNGGPGTIKKITFPE 61

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | |||||:||||||| ||||:||:|||| :||||||| ||||||||||||||||||||
Db     62 GSPFKYVKERVDEVDHANFKYSYSMIEGGALGDTLEKICNEIKIVATPDGGSILKISNKY 121

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           |||||||:||| :|| || || ||||||||||||||||
Db    122 HTKGDHEMKAEHMKAIKEKGEALLRAVESYLLAHSDAYN 160


RESULT  11
B55699
major pollen allergen Bet v 1c - European white birch
C;Species: Betula pendula (European white birch)
C;Date: 01-Dec-1995 #sequence_revision 01-Dec-1995 #text_change 20-Aug-1999
C;Accession: B55699; S41897
R;Swoboda, I.; Jilek, A.; Ferreira, F.; Engel, E.; Hoffmann-Sommergruber, K.; Scheiner,
ch, M.
J. Biol. Chem. 270, 2607-2613, 1995
A;Title: Isoforms of Bet v 1, the major birch pollen allergen, analyzed by liquid chr
A;Reference number: A55699; MUID:95155322
A;Accession: B55699
A;Molecule type: mRNA
A;Residues: 1-160 <SWO>
A;Cross-references: EMBL:X77265; NID:g452729; PIDN:CAA54481.1; PID:g452730
A;Note: the source is designated as Betula verrucosa
C;Superfamily: pathogenesis-related protein
C;Keywords: pollen
F;2-160/Product: major pollen allergen Bet v 1c #status experimental <MAT>


  Query Match             88.2%;  Score 722;  DB 2;  Length 160;
  Best Local Similarity   87.4%;  Pred. No. 3e-56;
  Matches  139;  Conservative    9;  Mismatches   11;  Indels    0;  Gaps    0;

Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
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Db      2 GVFNYESETTSVIPAARLFKAFILEGDTLIPKVAPQAISSVENIEGNGGPGTIKKITFPE 61

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | |||||:||||||| ||||:||:|||| :||||||| ||||||||||||||||||||
Db     62 GSPFKYVKERVDEVDHANFKYSYSMIEGGALGDTLEKICNEIKIVATPDGGSILKISNKY 121

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           ||||| |:||| :|| || || ||||||||||||||||
Db    122 HTKGDQEMKAEHMKAIKEKGEALLRAVESYLLAHSDAYN 160


RESULT  12
S47250
gene 1-Scl protein - European white birch
C;Species: Betula pendula (European white birch)
C;Date: 06-Jan-1995 #sequence_revision 06-Jan-1995 #text_change 20-Aug-1999
C;Accession: S47250
R;Swoboda, I.; Scheiner, O.; Heberle-Bors, E.; Vicente, O.
submitted to the EMBL Data Library, August 1994
A;Reference number: S47249
A;Accession: S47250
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-160 <SWO>
A;Cross-references: EMBL:X77599; NID:g534909; PIDN:CAA54694.1; PID:g534910
A;Note: the source is designated as Betula verrucosa
C;Superfamily: pathogenesis-related protein


  Query Match             86.3%;  Score 707;  DB 2;  Length 160;
  Best Local Similarity   84.9%;  Pred. No. 6.1e-55;
  Matches  135;  Conservative    9;  Mismatches   15;  Indels    0;  Gaps    0;
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Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
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Db       2 GVFDYEGETTSVIPAARLFKAFILDGDNLIPKVAPQTVSCVENIEGNGGPGTIKKITFPE 61

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | |||||:||||||| ||||:||||||| :||||||| ||||||  | ||||||||||
Db      62 GSPFKYVKERVDEVDHVNFKYSYSVIEGGAVGDTLEKICNEIKIVPAPGGGSILKISNKY 121

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           ||||:||:||||:|||||  | | ||||||||||||||
Db     122 HTKGNHEMKAEQIKASKEKAEALFRAVESYLLAHSDAYN 160


RESULT  13
S47251
gene 1 Sc2 protein - European white birch
C;Species: Betula pendula (European white birch)
C;Date: 06-Jan-1995 #sequence_revision 06-Jan-1995 #text_change 20-Aug-1999
C;Accession: S47251
R;Swoboda, I.; Scheiner, O.; Heberle-Bors, E.; Vicente, O.
submitted to the EMBL Data Library, August 1994
A;Reference number: S47249
A;Accession: S47251
A;Status: preliminary
A;Molecule type: mRNA
A;Residues: 1-159 <SWO>
A;Cross-references: EMBL:X77600; NID:g534899; PIDN:CAA54695.1; PID:g534900
A;Note: the source is designated as Betula verrucosa
C;Superfamily: pathogenesis-related protein


  Query Match             85.8%;  Score 703;  DB 2;  Length 159;
  Best Local Similarity   84.9%;  Pred. No. 1.4e-54;
  Matches  135;  Conservative    9;  Mismatches   15;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
           |||:|| |||||||||||||||||||||| |||||||:| |||||||||||||||:|||
Db       1 GVFDYEGETTSVIPAARLFKAFILDGDNLIPKVAPQAVSCVENIEGNGGPGTIKKITFPE 60

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | ||||||:|||||| ||||:||||||| :||||||| ||||||  | ||||||||||
Db      61 GSPFKYVKERVDEVDRVNFKYSYSVIEGGAVGDTLEKICNEIKIVPAPGGGSILKISNKY 120

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
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Db     121 HTKGNHEMKAEQIKASKEKAEALFRAVESYLLAHSDAYN 159


RESULT  14
S30054
major allergen Cor a I/6 - European hazel
C;Species: Corylus avellana (European hazel)
C;Date: 07-Apr-1994 #sequence_revision 07-Apr-1994 #text_change 20-Aug-1999
C;Accession: S30054
R;Breiteneder, H.; Ferreira, F.; Hoffmann-Sommergruber, K.; Ebner, C.; Breitenbach, M.;
Eur. J. Biochem. 212, 355-362, 1993
A;Title: Four recombinant isoforms of Cor a I, the major allergen of hazel pollen, show
A;Reference number: S30053; MUID:93185652
A;Accession: S30054
A;Molecule type: mRNA
A;Residues: 1-160 <BRE>
A;Cross-references: EMBL:X71000; NID:g22689; PIDN:CAA50328.1; PID:g22690
C;Genetics:
A;Gene: Cor a I/6
C;Superfamily: pathogenesis-related protein
C;Keywords: pollen


  Query Match             75.8%;  Score 621;  DB 2;  Length 160;
  Best Local Similarity   73.0%;  Pred. No. 2.1e-47;
  Matches  116;  Conservative   22;  Mismatches   21;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
           |||||| || |||||||||||:::|||| | ||||||||:||||:|||||||||| |:| |
Db       2 GVFNYEVETPSVIPAARLFKSYVLDGDKLIPKVAPQAITSVENVEGNGGPGTIKNITFGE 61

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           |  :||||:||||||:|||||:|:|||| :|| ||||: :|:|||| | ||||||||:|:
Db      62 GSRYKYVKERVDEVDNTNFKYSYTVIEGDVLGDKLEKVCSELKIVAAPGGGSILKISSKF 121

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           | |||||: ||::| :||| | ||||||:|||||| ||
Db     122 HAKGDHEINAEEMKGAKEMAEKLLRAVETYLLAHSAEYN 160


RESULT  15
S30055
major allergen Cor a I/11 - European hazel
C;Species: Corylus avellana (European hazel)
C;Date: 07-Apr-1994 #sequence_revision 07-Apr-1994 #text_change 20-Aug-1999
C;Accession: S30055; S35507
R;Breiteneder, H.; Ferreira, F.; Hoffmann-Sommergruber, K.; Ebner, C.; Breitenbach, M
Eur. J. Biochem. 212, 355-362, 1993
A;Title: Four recombinant isoforms of Cor a I, the major allergen of hazel pollen, sh
A;Reference number: S30053; MUID:93185652
A;Accession: S30055
A;Molecule type: mRNA
A;Residues: 1-160 <BRE1>
A;Cross-references: EMBL:X70997
R;Breiteneder, H.
submitted to the EMBL Data Library, February 1993
A;Reference number: S35507
A;Accession: S35507
A;Molecule type: mRNA
A;Residues: 1-133,'I',135-160 <BRE2>
A;Cross-references: EMBL:X70997; NID:g22683; PIDN:CAA50325.1; PID:g22684
C;Genetics:
A;Gene: Cor a I/1
C;Superfamily: pathogenesis-related protein
C;Keywords: pollen


  Query Match             75.8%;  Score 621;  DB 2;  Length 160;
  Best Local Similarity   73.0%;  Pred. No. 2.1e-47;
  Matches  116;  Conservative   22;  Mismatches   21;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
           |||||| |||||||||||:::|||| | ||||||||:||||:|||||||||| |:| |
Db       2 GVFNYEAETTSVIPAARLFKSYVLDGDKLIPKVAPQAITSVENVEGNGGPGTIKNITFGE 61

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           |  :||||:|||||||:||| |:|:|||| :|| ||||: :|:|||| | ||||||||:|:
Db      62 GSRYKYVKERVDEVDNTNFTYSYTVIEGDVLGDKLEKVCHELKIVAAPGGGSILKISSKF 121

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           | |||||: ||::| :||| | ||||||:|||||| ||
Db     122 HAKGDHEINAEEMKGAKEMAEKLLRAVETYLLAHSAEYN 160


Search completed: December 11, 2000, 09:58:34
Job time: 1011 sec
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GenCore version 4.5


OM protein - protein search, using sw model

Run on: December 11, 2000, 09:41:43 ; Search time 751.25 Seconds
(without alignments)
19.762 Million cell updates/sec

Title: US-09-270-910-37
Perfect score: 819
Sequence: 1 GVFNYETETTSVIPAARLFK.....GETLLRAVESYLLAHSDAYN 159

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 297973 seqs, 93374136 residues

Total number of hits satisfying chosen parameters: 297973

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : SPTREMBL_14:*
1: sp_archea:*
2: sp_bacteria:*
3: sp_fungi:*
4: sp_human:*
5: sp_invertebrate:*
6: sp_mammal:*
7: sp_mhc:*
8: sp_organelle:*
9: sp_phage:*
10: sp_plant:*
11: sp_rodent:*
12: sp_virus:*
13: sp_vertebrate:*
14: sp_unclassified:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

| Result No. | Score | % Query Match | Length | DB | ID | Description |
|---|---|---|---|---|---|---|
| 1 | 814 | 99.4 | 160 | 10 | Q96366 | Q96366 betula verr |
| 2 | 812 | 99.1 | 160 | 10 | O24642 | O24642 betula verr |
| 3 | 810 | 98.9 | 160 | 10 | Q42499 | Q42499 betula verr |
| 4 | 808 | 98.7 | 160 | 10 | O23752 | O23752 betula verr |
| 5 | 807 | 98.5 | 160 | 10 | Q96371 | Q96371 betula verr |
| 6 | 806 | 98.4 | 160 | 10 | Q9SCH8 | Q9sch8 betula verr |
| 7 | 805 | 98.3 | 160 | 10 | Q96370 | Q96370 betula verr |
| 8 | 804 | 98.2 | 160 | 10 | Q9SCI0 | Q9sci0 betula verr |
| 9 | 804 | 98.2 | 160 | 10 | Q9SCH9 | Q9sch9 betula verr |
| 10 | 803 | 98.0 | 160 | 10 | Q96365 | Q96365 betula verr |
| 11 | 803 | 98.0 | 160 | 10 | Q9SYW1 | Q9syw1 betula verr |
| 12 | 801 | 97.8 | 160 | 10 | Q96368 | Q96368 betula verr |
| 13 | 801 | 97.8 | 160 | 10 | Q9SCI2 | Q9sci2 betula verr |
| 14 | 800 | 97.7 | 160 | 10 | Q9SYW0 | Q9syw0 betula verr |
| 15 | 799 | 97.6 | 160 | 10 | Q9SCI3 | Q9sci3 betula verr |
| 16 | 798 | 97.4 | 159 | 10 | O23748 | O23748 betula verr |
| 17 | 798 | 97.4 | 160 | 10 | Q96367 | Q96367 betula verr |
| 18 | 798 | 97.4 | 160 | 10 | O23753 | O23753 betula verr |
| 19 | 796 | 97.2 | 160 | 10 | O23754 | O23754 betula verr |
| 20 | 795 | 97.1 | 160 | 10 | Q39426 | Q39426 betula verr |
| 21 | 793 | 96.8 | 160 | 10 | O23751 | O23751 betula verr |
| 22 | 792 | 96.7 | 160 | 10 | Q9SYW2 | Q9syw2 betula verr |
| 23 | 789 | 96.3 | 160 | 10 | Q9ZS39 | Q9zs39 betula verr |
| 24 | 788 | 96.2 | 160 | 10 | Q9SCH5 | Q9sch5 betula verr |
| 25 | 787 | 96.1 | 160 | 10 | Q39431 | Q39431 betula verr |
| 26 | 782 | 95.5 | 159 | 10 | O23746 | O23746 betula verr |
| 27 | 775 | 94.6 | 160 | 10 | Q9SCH6 | Q9sch6 betula verr |
| 28 | 773 | 94.4 | 159 | 10 | O23750 | O23750 betula verr |
| 29 | 751 | 91.7 | 160 | 10 | Q9ZS38 | Q9zs38 betula verr |
| 30 | 744 | 90.8 | 160 | 10 | Q39429 | Q39429 betula verr |
| 31 | 743 | 90.7 | 159 | 10 | O23749 | O23749 betula verr |
| 32 | 741 | 90.5 | 160 | 10 | Q39428 | Q39428 betula verr |
| 33 | 740 | 90.4 | 159 | 10 | O23747 | O23747 betula verr |
| 34 | 736 | 89.9 | 160 | 10 | Q39427 | Q39427 betula verr |
| 35 | 707 | 86.3 | 160 | 10 | Q39417 | Q39417 betula verr |
| 36 | 703 | 85.8 | 159 | 10 | Q39420 | Q39420 betula verr |
| 37 | 700 | 85.5 | 160 | 10 | Q39430 | Q39430 betula verr |
| 38 | 700 | 85.5 | 160 | 10 | Q39453 | Q39453 corylus ave |
| 39 | 688 | 84.0 | 160 | 10 | Q39425 | Q39425 betula verr |
| 40 | 664 | 81.1 | 161 | 10 | Q96382 | Q96382 carpinus be |
| 41 | 644 | 78.6 | 161 | 10 | Q96381 | Q96381 carpinus be |
| 42 | 638 | 77.9 | 160 | 10 | Q96378 | Q96378 carpinus be |
| 43 | 636 | 77.7 | 160 | 10 | Q96377 | Q96377 carpinus be |
| 44 | 627 | 76.6 | 160 | 10 | Q96379 | Q96379 carpinus be |
| 45 | 620 | 75.7 | 160 | 10 | Q96503 | Q96503 carpinus be |

ALIGNMENTS

RESULT 1
Q96366
ID Q96366 PRELIMINARY; PRT; 160 AA.
AC Q96366;
DT 01-FEB-1997 (TrEMBLrel. 02, Created)
DT 01-FEB-1997 (TrEMBLrel. 02, Last sequence update)
DT 01-JUN-2000 (TrEMBLrel. 14, Last annotation update)
DE POLLEN ALLERGEN BET V 1.
OS Betula verrucosa (White birch) (Betula pendula).
OC Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC Betulaceae; Betula.
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=POLLEN OBTAINED FROM ALLERGON, SWEDEN;
RA Larsen J.N.;
RL Submitted (SEP-1996) to the EMBL/GenBank/DDBJ databases.
CC -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC PROTEIN.
DR EMBL; Z80101; CAB02156.1; -.
DR HSSP; P15494; 1BTV.
DR MENDEL; 30889; Betve;1174;30889.
DR INTERPRO; IPR000916; -.
DR PFAM; PF00407; Bet_v_I; 1.
DR PRINTS; PR00634; BETALLERGEN.
DR PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
DR PRODOM; PD000531; -; 1.
KW Pathogenesis-related protein.
SQ SEQUENCE 160 AA; 17557 MW; B2174110A9588AD4 CRC64;

Query Match 99.4%; Score 814; DB 10; Length 160;
Best Local Similarity 98.7%; Pred. No. 9.6e-62;
Matches 157; Conservative 1; Mismatches 1; Indels 0; Gaps 0;

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Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
Db       2 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 61

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
Db      62 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPVGDTLEKISNEIKIVATPDGGSILKISNKY 121
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Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
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Db    122 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 160


RESULT   2
O24642
ID   O24642      PRELIMINARY;      PRT;   160 AA.
AC   O24642;
DT   01-JAN-1998 (TrEMBLrel. 05, Created)
DT   01-JAN-1998 (TrEMBLrel. 05, Last sequence update)
DT   01-JUN-2000 (TrEMBLrel. 14, Last annotation update)
DE   POLLEN ALLERGEN BETV1.
GN   BETV1.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC   Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=POLLEN;
RA   Friedl-Hajek R., Radauer C., Hoffmann-Sommergruber K., Leberl K.,
RA   Riordain G., Scheiner O., Breiteneder H.;
RL   Submitted (OCT-1997) to the EMBL/GenBank/DDBJ databases.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
DR   EMBL; AJ002109; CAA05189.1; -.
DR   EMBL; AJ002107; CAA05187.1; -.
DR   HSSP; P15494; 1BTV.
DR   MENDEL; 24383; Betve;1174;24383.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
DR   PRODOM; PD000531; -; 1.
KW   Pathogenesis-related protein.
SQ   SEQUENCE   160 AA;  17589 MW;  D8A04110BD1CDAC0 CRC64;


  Query Match             99.1%;  Score 812;  DB 10;  Length 160;
  Best Local Similarity   98.7%;  Pred. No. 1.4e-61;
  Matches  157;  Conservative    1;  Mismatches    1;  Indels    0;  Gaps    0;

Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
          |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      2 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 61

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          | |||||||||||||||||||||||||||:||||||||||||||||||||||||||||||
Db     62 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPMGDTLEKISNEIKIVATPDGGSILKISNKY 121

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          |||||||||||||||||||||||||||||||||||||||
Db    122 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 160


RESULT   3
Q42499
ID   Q42499      PRELIMINARY;      PRT;   160 AA.
AC   Q42499;
DT   01-NOV-1996 (TrEMBLrel. 01, Created)
DT   01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
DT   01-JUN-2000 (TrEMBLrel. 14, Last annotation update)
DE   MAJOR ALLERGEN BET V 1.
GN   BETV1.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC   Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=LEAF;
RA   Hoffmann-Sommergruber K.;
RL   Submitted (MAY-1996) to the EMBL/GenBank/DDBJ databases.
RN   [2]
RP   SEQUENCE FROM N.A.
RC   TISSUE=POLLEN;
RA   Friedl-Hajek R., Radauer C., O'Riordain G., Hoffmann-Sommergruber K.,
RA   Leberl K., Scheiner O., Breiteneder H.;
RT   "New Betv1 isoforms including a naturally occurring truncated form of
RT   the protein derived from Austrian birch pollen.";
RL   Submitted (JUN-1998) to the EMBL/GenBank/DDBJ databases.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
DR   EMBL; Z72432; CAA96541.1; -.
DR   EMBL; Z72429; CAA96538.1; -.
DR   EMBL; AJ006907; CAA07322.1; -.
DR   HSSP; P15494; 1BTV.
DR   MENDEL; 30817; Betve;1174;30817.
DR   MENDEL; 36840; Betve;1174;36840.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
DR   PRODOM; PD000531; -; 1.
KW   Pathogenesis-related protein.
SQ   SEQUENCE   160 AA;  17541 MW;  E3950410AF8B5096 CRC64;


  Query Match             98.9%;  Score 810;  DB 10;  Length 160;
  Best Local Similarity   98.7%;  Pred. No. 2.1e-61;
  Matches  157;  Conservative    0;  Mismatches    2;  Indels    0;  Gaps    0;

Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
          |||||||| ||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      2 GVFNYETEATSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 61

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          | |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     62 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 121

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          |||||||||||||||||||||||||||||||||||||||
Db    122 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 160


RESULT   4
O23752
ID   O23752      PRELIMINARY;      PRT;   160 AA.
AC   O23752;
DT   01-JAN-1998 (TrEMBLrel. 05, Created)
DT   01-JAN-1998 (TrEMBLrel. 05, Last sequence update)
DT   01-JUN-2000 (TrEMBLrel. 14, Last annotation update)
DE   POLLEN ALLERGEN BETV1.
GN   BETV1.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC   Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=POLLEN;
RA   Friedl-Hajek R., Radauer C., Hoffmann-Sommergruber K., Leberl K.,
RA   Riordain G., Scheiner O., Breiteneder H.;
RL   Submitted (OCT-1997) to the EMBL/GenBank/DDBJ databases.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
DR   EMBL; AJ002108; CAA05188.1; -.
DR   HSSP; P15494; 1BTV.
DR   MENDEL; 26841; Betve;1174;26841.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
DR   PRODOM; PD000531; -; 1.
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KW   Pathogenesis-related protein.
SQ   SEQUENCE   160 AA;  17523 MW;  69BB110BBBDA1ADD CRC64;


  Query Match             98.7%;  Score 808;  DB 10;  Length 160;
  Best Local Similarity   98.7%;  Pred. No. 3.1e-61;
  Matches  157;  Conservative    0;  Mismatches    2;  Indels    0;  Gaps    0;

Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
          |||||||||||||||||||||||||||| ||||||||||||||||||||||||||||||
Db      2 GVFNYETETTSVIPAARLFKAFILDGDNLVPKVAPQAISSVENIEGNGGPGTIKKISFPE 61

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          | ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     62 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 121

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          |||||||||||||||||||||||||||||||||||||||
Db    122 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 160


RESULT   5
Q96371
ID   Q96371      PRELIMINARY;      PRT;   160 AA.
AC   Q96371;
DT   01-FEB-1997 (TrEMBLrel. 02, Created)
DT   01-FEB-1997 (TrEMBLrel. 02, Last sequence update)
DT   01-JUN-2000 (TrEMBLrel. 14, Last annotation update)
DE   POLLEN ALLERGEN BET V 1.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC   Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=POLLEN OBTAINED FROM ALLERGON, SWEDEN;
RA   Larsen J.N.;
RL   Submitted (SEP-1996) to the EMBL/GenBank/DDBJ databases.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
DR   EMBL; Z80106; CAB02161.1; -.
DR   HSSP; P15494; 1BTV.
DR   MENDEL; 30893; Betve;1174;30893.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
DR   PRODOM; PD000531; -; 1.
KW   Pathogenesis-related protein.
SQ   SEQUENCE   160 AA;  17670 MW;  69B4410BBA6A1AC6 CRC64;


  Query Match             98.5%;  Score 807;  DB 10;  Length 160;
  Best Local Similarity   98.7%;  Pred. No. 3.7e-61;
  Matches  157;  Conservative    0;  Mismatches    2;  Indels    0;  Gaps    0;

Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      2 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 61

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          | ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     62 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 121

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          |||||||||||||||||| ||||||||||||||||||||
Db    122 HTKGDHEVKAEQVKASKEMRETLLRAVESYLLAHSDAYN 160


RESULT   6
Q9SCH8
ID   Q9SCH8      PRELIMINARY;      PRT;   160 AA.
AC   Q9SCH8;
DT   01-MAY-2000 (TrEMBLrel. 13, Created)
DT   01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
DT   01-JUN-2000 (TrEMBLrel. 14, Last annotation update)
DE   POLLEN ALLERGEN BETV1, ISOFORM AT50.
GN   BETV1.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC   Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=POLLEN;
RA   Friedl-Hajek R., Radauer C., Riordain G., Hoffmann-Sommergruber K.,
RA   Leberl K., Scheiner O., Breiteneder H.;
RT   "New Bet v 1 isoforms including a naturally occurring truncated form
RT   of the protein derived from Austrian birch pollen.";
RL   Mol. Immunol. 36:639-645(1999).
DR   EMBL; AJ006911; CAA07326.1; -.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
SQ   SEQUENCE   160 AA;  17631 MW;  D8A9575C4C393DA0 CRC64;


  Query Match             98.4%;  Score 806;  DB 10;  Length 160;
  Best Local Similarity   97.5%;  Pred. No. 4.5e-61;
  Matches  155;  Conservative    3;  Mismatches    1;  Indels    0;  Gaps    0;

Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
          |||||||||||:|||||||:||||||||||||||||||||||||||||||||||||||||
Db      2 GVFNYETETTSLIPAARLFRAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 61

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          | ||||||||||||||||||||||||:|||||||||||||||||||||||||||||||||
Db     62 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPMGDTLEKISNEIKIVATPDGGSILKISNKY 121

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          |||||||||||||||||||||||||||||||||||||||
Db    122 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 160


RESULT   7
Q96370
ID   Q96370      PRELIMINARY;      PRT;   160 AA.
AC   Q96370;
DT   01-FEB-1997 (TrEMBLrel. 02, Created)
DT   01-FEB-1997 (TrEMBLrel. 02, Last sequence update)
DT   01-JUN-2000 (TrEMBLrel. 14, Last annotation update)
DE   POLLEN ALLERGEN BET V 1.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC   Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=POLLEN OBTAINED FROM ALLERGON, SWEDEN;
RA   Larsen J.N.;
RL   Submitted (SEP-1996) to the EMBL/GenBank/DDBJ databases.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
DR   EMBL; Z80105; CAB02160.1; -.
DR   HSSP; P15494; 1BTV.
DR   MENDEL; 30892; Betve;1174;30892.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
DR   PRODOM; PD000531; -; 1.
KW   Pathogenesis-related protein.
SQ   SEQUENCE   160 AA;  17541 MW;  D8AF110BBD1CDADB CRC64;
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  Query Match             98.3%;  Score 805;  DB 10;  Length 160;
  Best Local Similarity   98.1%;  Pred. No. 5.5e-61;
  Matches  156;  Conservative    1;  Mismatches    2;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
           |||||||||||||||||||||||||||||| ||||||||||||||||||||||||||||||
Db       2 GVFNYETETTSVIPAARLFKAFILDGDNLVPKVAPQAISSVENIEGNGGPGTIKKISFPE 61

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | |||||||||||||||||||||||||||:||||||||||||||||||||||||||||||
Db      62 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPMGDTLEKISNEIKIVATPDGGSILKISNKY 121

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           |||||||||||||||||||||||||||||||||||||||
Db     122 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 160


RESULT   8
Q9SCI0
ID   Q9SCI0      PRELIMINARY;      PRT;   160 AA.
AC   Q9SCI0;
DT   01-MAY-2000 (TrEMBLrel. 13, Created)
DT   01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
DT   01-JUN-2000 (TrEMBLrel. 14, Last annotation update)
DE   POLLEN ALLERGEN BETV1, ISOFORM AT37.
GN   BETV1.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC   Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=POLLEN;
RA   Friedl-Hajek R., Radauer C., Riordain G., Hoffmann-Sommergruber K.,
RA   Leberl K., Scheiner O., Breiteneder H.;
RT   "New Bet v 1 isoforms including a naturally occurring truncated form
RT   of the protein derived from Austrian birch pollen.";
RL   Mol. Immunol. 36:639-645(1999).
DR   EMBL; AJ006908; CAA07323.1; -.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
SQ   SEQUENCE   160 AA;  17572 MW;  99A3581E5B3A03FB CRC64;


  Query Match             98.2%;  Score 804;  DB 10;  Length 160;
  Best Local Similarity   97.5%;  Pred. No. 6.7e-61;
  Matches  155;  Conservative    2;  Mismatches    2;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
           |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       2 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 61

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | |||||||||||||||||||||||||||||||||||||||||||||||| :|||||||
Db      62 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGCVLKISNKY 121

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           ||||:|||||||||||||||||||||||||||||||||||
Db     122 HTKGNHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 160


RESULT   9
Q9SCH9
ID   Q9SCH9      PRELIMINARY;      PRT;   160 AA.
AC   Q9SCH9;
DT   01-MAY-2000 (TrEMBLrel. 13, Created)
DT   01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
DT   01-JUN-2000 (TrEMBLrel. 14, Last annotation update)
DE   POLLEN, ALLERGEN BETV1, ISOFORM AT45.
GN   BETV1.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC   Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=POLLEN;
RA   Friedl-Hajek R., Radauer C., Riordain G., Hoffmann-Sommergruber K.,
RA   Leberl K., Scheiner O., Breiteneder H.;
RT   "New Bet v 1 isoforms including a naturally occurring truncated form
RT   of the protein derived from Austrian birch pollen.";
RL   Mol. Immunol. 36:639-645(1999).
DR   EMBL; AJ006910; CAA07325.1; -.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
SQ   SEQUENCE   160 AA;  17615 MW;  5A2A67BCCC45CA3E CRC64;


  Query Match             98.2%;  Score 804;  DB 10;  Length 160;
  Best Local Similarity   97.5%;  Pred. No. 6.7e-61;
  Matches  155;  Conservative    3;  Mismatches    1;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
           |||||||||||||||||||||||||||||||||||||||||||||||||||||||||||:|||
Db       2 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKINFPE 61

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | |||||||||||||||||||||||||:||||||||||||||||||||||||||||||||
Db      62 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPMGDTLEKISNEIKIVATPDGGSILKISNKY 121

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           ||||:|||||||||||||||||||||||||||||||||||
Db     122 HTKGNHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 160


RESULT  10
Q96365
ID   Q96365      PRELIMINARY;      PRT;   160 AA.
AC   Q96365;
DT   01-FEB-1997 (TrEMBLrel. 02, Created)
DT   01-FEB-1997 (TrEMBLrel. 02, Last sequence update)
DT   01-JUN-2000 (TrEMBLrel. 14, Last annotation update)
DE   POLLEN ALLERGEN BET V 1.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC   Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=POLLEN OBTAINED FROM ALLERGON, SWEDEN;
RA   Larsen J.N.;
RL   Submitted (SEP-1996) to the EMBL/GenBank/DDBJ databases.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
DR   EMBL; Z80100; CAB02155.1; -.
DR   HSSP; P15494; 1BTV.
DR   MENDEL; 30888; Betve;1174;30888.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
DR   PRODOM; PD000531; -; 1.
KW   Pathogenesis-related protein.
SQ   SEQUENCE   160 AA;  17558 MW;  4200581E49B893E9 CRC64;


  Query Match             98.0%;  Score 803;  DB 10;  Length 160;
  Best Local Similarity   96.9%;  Pred. No. 8.1e-61;
  Matches  154;  Conservative    3;  Mismatches    2;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
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Db      2 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 61

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          | ||||||||||||||||||||||||||||||:||||||||||||||||||| :|||||||
Db     62 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPVGDTLEKISNEIKIVATPDGGCVLKISNKY 121

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          ||||:|||||||||||||||||||||||||||||||||||
Db    122 HTKGNHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 160


RESULT  11
Q9SYW1
ID   Q9SYW1      PRELIMINARY;      PRT;   160 AA.
AC   Q9SYW1;
DT   01-MAY-2000 (TrEMBLrel. 13, Created)
DT   01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
DT   01-JUN-2000 (TrEMBLrel. 14, Last annotation update)
DE   ISOALLERGEN BET V 1 B2.
GN   BETV1B2.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC   Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A.
RA   Son D.Y., Haustein D., Vieths S.;
RT   "Cloning and characterization of isoforms of the major birchpollen
RT   allergen Bet v 1.";
RL   Submitted (JAN-1999) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; AF124838; AAD26561.1; -.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
SQ   SEQUENCE   160 AA;  17565 MW;  E9B5F580BBDA1AC5 CRC64;


  Query Match             98.0%;  Score 803;  DB 10;  Length 160;
  Best Local Similarity   98.1%;  Pred. No. 8.1e-61;
  Matches  156;  Conservative    0;  Mismatches    3;  Indels    0;  Gaps    0;

Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      2 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 61

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          | ||||||||||||||||||||||||||||||||||||||||||||||||| ||||||||
Db     62 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGPILKISNKY 121

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          |||||||||||||||||||||||||||| ||||||||
Db    122 HTKGDHEVKAEQVKASKEMGETLLRAVESYPLAHSDAYN 160


RESULT  12
Q96368
ID   Q96368      PRELIMINARY;      PRT;   160 AA.
AC   Q96368;
DT   01-FEB-1997 (TrEMBLrel. 02, Created)
DT   01-FEB-1997 (TrEMBLrel. 02, Last sequence update)
DT   01-JUN-2000 (TrEMBLrel. 14, Last annotation update)
DE   POLLEN ALLERGEN BET V 1.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC   Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=POLLEN OBTAINED FROM ALLERGON, SWEDEN;
RA   Larsen J.N.;
RL   Submitted (SEP-1996) to the EMBL/GenBank/DDBJ databases.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
DR   EMBL; Z80103; CAB02158.1; -.
DR   HSSP; P15494; 1BTV.
DR   MENDEL; 30891; Betve;1174;30891.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
DR   PRODOM; PD000531; -; 1.
KW   Pathogenesis-related protein.
SQ   SEQUENCE   160 AA;  17466 MW;  430D72F300B9BBCE CRC64;


  Query Match             97.8%;  Score 801;  DB 10;  Length 160;
  Best Local Similarity   97.5%;  Pred. No. 1.2e-60;
  Matches  155;  Conservative    2;  Mismatches    2;  Indels    0;  Gaps    0;

Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
          ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db      2 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPG 61

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          |||||||||||||||||||||||||||||||||||||||||||||||||| :|||||||
Db     62 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGCVLKISNKY 121

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          ||||:|||||||||||||||||||||||||||||||||||
Db    122 HTKGNHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 160


RESULT  13
Q9SCI2
ID   Q9SCI2      PRELIMINARY;      PRT;   160 AA.
AC   Q9SCI2;
DT   01-MAY-2000 (TrEMBLrel. 13, Created)
DT   01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
DT   01-JUN-2000 (TrEMBLrel. 14, Last annotation update)
DE   POLLEN ALLERGEN BETV1, ISOFORM AT10.
GN   BETV1.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC   Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=POLLEN;
RA   Friedl-Hajek R.; Radauer C., Riordain G., Hoffmann-Sommergruber K.,
RA   Leberl K., Scheiner O., Breiteneder H.;
RT   "New Bet v 1 isoforms including a naturally occurring truncated form
RT   of the protein derived from Austrian birch pollen.";
RL   Mol. Immunol. 36:639-645(1999).
DR   EMBL; AJ006904; CAA07319.1; -.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
SQ   SEQUENCE   160 AA;  17520 MW;  EB3128ED2A630A23 CRC64;


  Query Match             97.8%;  Score 801;  DB 10;  Length 160;
  Best Local Similarity   97.5%;  Pred. No. 1.2e-60;
  Matches  155;  Conservative    1;  Mismatches    3;  Indels    0;  Gaps    0;

Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
          |||||||||||||||||||||||| |||||||||||||||||||||||||:|||
Db      2 GVFNYETETTSVIPAARLFKAFILDGDNLVPKVAPQAISSVENIEGNGGPGTIKKINFPE 61

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          | ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     62 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 121

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          |||||||||||||||||||||||||||| ||||||||||
Db    122 HTKGDHEVKAEQVKASKEMGETLLRAVEGYLLAHSDAYN 160
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RESULT  14
Q9SYW0
ID   Q9SYW0      PRELIMINARY;      PRT;   160 AA.
AC   Q9SYW0;
DT   01-MAY-2000 (TrEMBLrel. 13, Created)
DT   01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
DT   01-JUN-2000 (TrEMBLrel. 14, Last annotation update)
DE   ISOALLERGEN BET V 1 B1.
GN   BETV1B1.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC   Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A.
RA   Son D.Y., Haustein D., Vieths S.;
RT   "Cloning and characterization of isoforms of the major birchpollen
RT   allergen Bet v 1.";
RL   Submitted (JAN-1999) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; AF124837; AAD26560.1; -.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
SQ   SEQUENCE   160 AA;  17530 MW;  4200581E49B88CD4 CRC64;


  Query Match             97.7%;  Score 800;  DB 10;  Length 160;
  Best Local Similarity   96.2%;  Pred. No. 1.5e-60;
  Matches  153;  Conservative    4;  Mismatches    2;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       2 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 61

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | ||||||||||||||||||||||||||:||||||||||||||||||| :|||||||
Db      62 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPVGDTLEKISNEIKIVATPDGGCVLKISNKY 121

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           ||||:||||||||||||||||:|||||||||||||||
Db     122 HTKGNHEVKAEQVKASKEMGETLLKAVESYLLAHSDAYN 160


RESULT  15
Q9SCI3
ID   Q9SCI3      PRELIMINARY;      PRT;   160 AA.
AC   Q9SCI3;
DT   01-MAY-2000 (TrEMBLrel. 13, Created)
DT   01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
DT   01-JUN-2000 (TrEMBLrel. 14, Last annotation update)
DE   POLLEN ALLERGEN BETV1, ISOFORM AT8.
GN   BETV1.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC   Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=POLLEN;
RA   Friedl-Hajek R., Radauer C., Riordain G., Hoffmann-Sommergruber K.,
RA   Leberl K., Scheiner O., Breiteneder H.;
RT   "New Bet v 1 isoforms including a naturally occurring truncated form
RT   of the protein derived from Austrian birch pollen.";
RL   Mol. Immunol. 36:639-645(1999).
DR   EMBL; AJ006903; CAA07318.1; -.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
SQ   SEQUENCE   160 AA;  17588 MW;  5715581E49A223E9 CRC64;


  Query Match             97.6%;  Score 799;  DB 10;  Length 160;
  Best Local Similarity   96.2%;  Pred. No. 1.8e-60;
  Matches  153;  Conservative    3;  Mismatches    3;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60
           ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db       2 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 61

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | ||||||||||||||||||||||||||:||||||||||||||||||| :|||||||
Db      62 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPVGDTLEKISNEIKIVTTPDGGCVLKISNKY 121

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           ||||:||||||||||||||||||||||||||||||||
Db     122 HTKGNHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 160


Search completed: December 11, 2000, 10:11:10
Job time: 1767 sec
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GenCore version 4.5


OM protein - protein search, using sw model

Run on: December 11, 2000, 10:41:28 ; Search time 10.01 Seconds
(without alignments)
507.465 Million cell updates/sec

Title: US-09-270-910-37-COPY
Perfect score: 818
Sequence: 1 GVFNYETETTSVIPAARLFK.....GETLLRAVESYLLAHSDAYN 159

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 87993 seqs, 31947931 residues

Total number of hits satisfying chosen parameters: 87993

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : SwissProt_39:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

| Result No. | Score | % Query Match | Length | DB | ID | Description |
|---|---|---|---|---|---|---|
| 1 | 810 | 99.0 | 159 | 1 | BV1A_BETVE | P15494 betula verr |
| 2 | 790 | 96.6 | 159 | 1 | BV1J_BETVE | P43183 betula verr |
| 3 | 785 | 96.0 | 159 | 1 | BV1E_BETVE | P43178 betula verr |
| 4 | 784 | 95.8 | 159 | 1 | BV1F_BETVE | P43179 betula verr |
| 5 | 782 | 95.6 | 159 | 1 | BV1D_BETVE | P43177 betula verr |
| 6 | 781 | 95.5 | 159 | 1 | BV1G_BETVE | P43180 betula verr |
| 7 | 775 | 94.7 | 159 | 1 | BV1L_BETVE | P43185 betula verr |
| 8 | 735 | 89.9 | 159 | 1 | BV1M_BETVE | P43186 betula verr |
| 9 | 729 | 89.1 | 159 | 1 | BV1B_BETVE | P45431 betula verr |
| 10 | 725 | 88.6 | 159 | 1 | BV1K_BETVE | P43184 betula verr |
| 11 | 717 | 87.7 | 159 | 1 | BV1C_BETVE | P43176 betula verr |
| 12 | 678 | 82.9 | 159 | 1 | MPAG_ALNGL | P38948 alnus gluti |
| 13 | 635 | 77.6 | 159 | 1 | MPA2_CARBE | P38950 carpinus be |
| 14 | 621 | 75.9 | 159 | 1 | MPA1_CARBE | P38949 carpinus be |
| 15 | 610 | 74.6 | 159 | 1 | MPAA_CORAV | Q08407 corylus ave |
| 16 | 500 | 61.1 | 160 | 1 | PRU1_PRUAV | O24248 prunus aviu |
| 17 | 458.5 | 56.1 | 158 | 1 | MAL1_MALDO | P43211 malus domes |
| 18 | 415.5 | 50.8 | 157 | 1 | PR1_MEDSA | Q43560 medicago sa |
| 19 | 381 | 46.6 | 158 | 1 | DRR3_PEA | P14710 pisum sativ |
| 20 | 377 | 46.1 | 158 | 1 | AB18_PEA | Q06930 pisum sativ |
| 21 | 376 | 46.0 | 158 | 1 | SAM2_SOYBN | P26987 glycine max |
| 22 | 372 | 45.5 | 158 | 1 | DRR4_PEA | P27047 pisum sativ |
| 23 | 369.5 | 45.2 | 159 | 1 | DRR1_PEA | P13239 pisum sativ |
| 24 | 365 | 44.6 | 155 | 1 | PR1_PHAVU | P25985 phaseolus v |
| 25 | 357.5 | 43.7 | 155 | 1 | PR2_PHAVU | P25986 phaseolus v |
| 26 | 344 | 42.1 | 156 | 1 | L18B_LUPLU | P52779 lupinus lut |
| 27 | 337.5 | 41.3 | 155 | 1 | PRS1_SOLTU | P17641 solanum tub |
| 28 | 337.5 | 41.3 | 155 | 1 | PRS2_SOLTU | P17642 solanum tub |
| 29 | 335 | 41.0 | 156 | 1 | L18A_LUPLU | P52778 lupinus lut |
| 30 | 334.5 | 40.9 | 158 | 1 | PR2_PETCR | P27538 petroselinu |
| 31 | 327.5 | 40.0 | 157 | 1 | AB17_PEA | Q06931 pisum sativ |
| 32 | 322 | 39.4 | 154 | 1 | RNS1_PANGI | P80889 panax ginse |
| 33 | 311 | 38.0 | 155 | 1 | PR11_PETCR | P19417 petroselinu |
| 34 | 309.5 | 37.8 | 154 | 1 | MPAG_APIGR | P49372 apium grave |
| 35 | 307.5 | 37.6 | 153 | 1 | RNS2_PANGI | P80890 panax ginse |
| 36 | 307 | 37.5 | 155 | 1 | PR13_PETCR | P19418 petroselinu |
| 37 | 296 | 36.2 | 157 | 1 | RAP_TAROF | O49065 taraxacum o |
| 38 | 277.5 | 33.9 | 154 | 1 | DAU1_DAUCA | O04298 daucus caro |
| 39 | 240 | 29.3 | 158 | 1 | PR1_ASPOF | Q05736 asparagus o |
| 40 | 88 | 10.8 | 615 | 1 | DNAK_THETH | Q56235 thermus aqu |
| 41 | 83 | 10.1 | 387 | 1 | YRS8_CAEEL | Q10004 caenorhabdi |
| 42 | 80.5 | 9.8 | 956 | 1 | CB31_YEAST | P32504 saccharomyc |
| 43 | 79.5 | 9.7 | 936 | 1 | ORP1_MOUSE | P56716 mus musculu |
| 44 | 79 | 9.7 | 669 | 1 | DAF1_CAEEL | P20792 caenorhabdi |
| 45 | 79 | 9.7 | 726 | 1 | NU84_YEAST | P52891 saccharomyc |

ALIGNMENTS

RESULT 1
BV1A_BETVE
ID BV1A_BETVE STANDARD; PRT; 159 AA.
AC P15494; Q96369;
DT 01-APR-1990 (Rel. 14, Created)
DT 01-APR-1990 (Rel. 14, Last sequence update)
DT 15-JUL-1998 (Rel. 36, Last annotation update)
DE MAJOR POLLEN ALLERGEN BET V 1-A (BET V I-A).
GN BETVIA OR BETVI.
OS Betula verrucosa (White birch) (Betula pendula).
OC Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC Fagales; Betulaceae; Betula.
RN [1]
RP SEQUENCE FROM N.A., AND SEQUENCE OF 1-34.
RC TISSUE=POLLEN;
RX MEDLINE; 90005395.
RA Breiteneder H., Pettenburger K., Bito A., Valenta R., Kraft D.,
RA Rumpold H., Scheiner O., Breitenbach M.;
RT "The gene coding for the major birch pollen allergen Betv1, is highly
RT homologous to a pea disease resistance response gene.";
RL EMBO J. 8:1935-1938(1989).
RN [2]
RP SEQUENCE FROM N.A.
RC TISSUE=POLLEN;
RA Larsen J.N.;
RL Submitted (SEP-1996) to the EMBL/GenBank/DDBJ databases.
RN [3]
RP SEQUENCE.
RC TISSUE=POLLEN;
RX MEDLINE; 95155322.
RA Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber K.,
RA Scheiner O., Kraft D., Breiteneder H., Pittenauer E., Schmid E.,
RA Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;
RT "Isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT liquid chromatography, mass spectrometry, and cDNA cloning.";
RL J. Biol. Chem. 270:2607-2613(1995).
RN [4]
RP PARTIAL SEQUENCE.
RX MEDLINE; 91317572.
RA Elsayed S., Vik H.;
RT "Purification and N-terminal amino acid sequence of two birch pollen
RT isoallergens (Bet v I and Bet v II).";
RL Int. Arch. Allergy Appl. Immunol. 93:378-384(1990).
RN [5]
RP X-RAY CRYSTALLOGRAPHY (2.0 ANGSTROMS), AND STRUCTURE BY NMR.
RX MEDLINE; 97102431.
RA Gajhede M., Osmark P., Poulsen F.M., Ipsen H., Larsen J.N.,
RA van Neerven R.J.J., Schou C., Loewenstein H., Spangfort M.D.;
RT "X-ray and NMR structure of Bet v 1, the origin of birch pollen
RT allergy.";
RL Nat. Struct. Biol. 3:1040-1045(1996).
CC -!- SUBCELLULAR LOCATION: CYTOPLASMIC.
CC -!- DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC AMERICA AND USSR.
CC -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED

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CC   ---------------------------------------------------------------------
DR   EMBL; X15877; CAA33887.1; -.
DR   EMBL; Z80098; CAB02153.1; -.
DR   EMBL; Z80099; CAB02154.1; -.
DR   EMBL; Z80104; CAB02159.1; -.
DR   PIR; S05376; S05376.
DR   PDB; 1BTV; 12-AUG-97.
DR   PDB; 1BV1; 17-SEP-97.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
KW   Pathogenesis-related protein; Allergen; Multigene family;
KW   3D-structure.
FT   INIT_MET      0      0
FT   VARIANT      62     62       F -> L.
SQ   SEQUENCE   159 AA;  17440 MW;  96E181194BBA83E6 CRC64;


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  Matches  157;  Conservative    0;  Mismatches    2;  Indels    0;  Gaps    0;

Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
          |||||||||||||||||||||||||||||||||||||||||| ||||||||||||||||
Db      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          | ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     61 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          |||||||||||||||||||||||||||||||||||||||
Db    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159


RESULT   2
BV1J_BETVE
ID   BV1J_BETVE     STANDARD;      PRT;   159 AA.
AC   P43183;
DT   01-NOV-1995 (Rel. 32, Created)
DT   01-NOV-1995 (Rel. 32, Last sequence update)
DT   01-NOV-1997 (Rel. 35, Last annotation update)
DE   MAJOR POLLEN ALLERGEN BET V 1-J (BET V I-J).
GN   BETV1J.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC   Fagales; Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
RC   TISSUE=POLLEN;
RX   MEDLINE; 95155322.
RA   Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber K.,
RA   Scheiner O., Kraft D., Breiteneder H., Pittenauer E., Schmid E.,
RA   Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;
RT   "Isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT   liquid chromatography, mass spectrometry, and cDNA cloning.";
RL   J. Biol. Chem. 270:2607-2613(1995).
CC   -!- SUBCELLULAR LOCATION: CYTOPLASMIC.
CC   -!- DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC       AMERICA AND USSR.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
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CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; X77271; CAA54487.1; -.
DR   HSSP; P15494; 1BTV.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
KW   Pathogenesis-related protein; Allergen; Multigene family.
FT   INIT_MET      0      0
SQ   SEQUENCE   159 AA;  17408 MW;  D2AC26E9E7710A8D CRC64;


  Query Match             96.6%;  Score 790;  DB 1;  Length 159;
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          |||||||| |||||||||||||||||||||||||||||||| ||||||||||||||||
Db      1 GVFNYETEATSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          | |||||||||||||||||:||||||||:||||||||||||||||:|||||||:|||
Db     61 GFPFKYVKDRVDEVDHTNFKYSYSVIEGGPVGDTLEKISNEIKIVATPNGGSILKINNKY 120

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
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Db    121 HTKGDHEVKAEQIKASKEMGETLLRAVESYLLAHSDAYN 159


RESULT   3
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ID   BV1E_BETVE     STANDARD;      PRT;   159 AA.
AC   P43178;
DT   01-NOV-1995 (Rel. 32, Created)
DT   01-NOV-1995 (Rel. 32, Last sequence update)
DT   01-NOV-1997 (Rel. 35, Last annotation update)
DE   MAJOR POLLEN ALLERGEN BET V 1-E (BET V I-E).
GN   BETV1E.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC   Fagales; Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
RC   TISSUE=POLLEN;
RX   MEDLINE; 95155322.
RA   Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber K.,
RA   Scheiner O., Kraft D., Breiteneder H., Pittenauer E., Schmid E.,
RA   Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;
RT   "Isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT   liquid chromatography, mass spectrometry, and cDNA cloning.";
RL   J. Biol. Chem. 270:2607-2613(1995).
CC   -!- SUBCELLULAR LOCATION: CYTOPLASMIC.
CC   -!- DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC       AMERICA AND USSR.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
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CC   ---------------------------------------------------------------------
DR   EMBL; X77267; CAA54483.1; -.
DR   HSSP; P15494; 1BTV.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
KW   Pathogenesis-related protein; Allergen; Multigene family.
FT   INIT_MET      0      0
SQ   SEQUENCE   159 AA;  17316 MW;  3E752543EDD1A08E CRC64;


  Query Match             96.0%;  Score 785;  DB 1;  Length 159;
  Best Local Similarity   94.3%;  Pred. No. 7.6e-62;
  Matches  150;  Conservative    6;  Mismatches    3;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
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Db       1 GVFNYETEATSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           |:|||||| ||||||||||||:||||||||:||||||||||||||||:|||||||:|||
Db      61 GIPFKYVKGRVDEVDHTNFKYSYSVIEGGPVGDTLEKISNEIKIVATPNGGSILKINNKY 120

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
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Db     121 HTKGDHEVKAEQIKASKEMGETLLRAVESYLLAHSDAYN 159


RESULT   4
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ID   BV1F_BETVE     STANDARD;      PRT;   159 AA.
AC   P43179;
DT   01-NOV-1995 (Rel. 32, Created)
DT   01-NOV-1995 (Rel. 32, Last sequence update)
DT   01-NOV-1997 (Rel. 35, Last annotation update)
DE   MAJOR POLLEN ALLERGEN BET V 1-F/I (BET V I-F/I).
GN   BETV1F AND BETV1I.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC   Fagales; Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
RC   TISSUE=POLLEN;
RX   MEDLINE; 95155322.
RA   Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber K.,
RA   Scheiner O., Kraft D., Breiteneder H., Pittenauer E., Schmid E.,
RA   Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;
RT   "Isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT   liquid chromatography, mass spectrometry, and cDNA cloning.";
RL   J. Biol. Chem. 270:2607-2613(1995).
CC   -!- SUBCELLULAR LOCATION: CYTOPLASMIC.
CC   -!- DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC       AMERICA AND USSR.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
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CC   ---------------------------------------------------------------------
DR   EMBL; X77268; CAA54484.1; -.
DR   EMBL; X77274; CAA54490.1; -.
DR   HSSP; P15494; 1BTV.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
KW   Pathogenesis-related protein; Allergen; Multigene family.
FT   INIT_MET      0      0
SQ   SEQUENCE   159 AA;  17421 MW;  6063F9C82A71165C CRC64;


  Query Match             95.8%;  Score 784;  DB 1;  Length 159;
  Best Local Similarity   94.3%;  Pred. No. 9.2e-62;
  Matches  150;  Conservative    5;  Mismatches    4;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
           |||||| | |||||||||||||||||||||||||||||||| ||||||||||||||||
Db       1 GVFNYEIEATSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 60

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | |||||||||||||||||:||||||||:||||||||||||||||:|||||||:|||
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Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
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Db     121 HTKGDHEVKAEQIKASKEMGETLLRAVESYLLAHSDAYN 159


RESULT   5
BV1D_BETVE
ID   BV1D_BETVE     STANDARD;      PRT;   159 AA.
AC   P43177;
DT   01-NOV-1995 (Rel. 32, Created)
DT   01-NOV-1995 (Rel. 32, Last sequence update)
DT   01-NOV-1997 (Rel. 35, Last annotation update)
DE   MAJOR POLLEN ALLERGEN BET V 1-D/H (BET V I-D/H).
GN   BETV1D AND BETV1H.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC   Fagales; Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
RC   TISSUE=POLLEN;
RX   MEDLINE; 95155322.
RA   Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber K.,
RA   Scheiner O., Kraft D., Breiteneder H., Pittenauer E., Schmid E.,
RA   Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;
RT   "Isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT   liquid chromatography, mass spectrometry, and cDNA cloning.";
RL   J. Biol. Chem. 270:2607-2613(1995).
CC   -!- SUBCELLULAR LOCATION: CYTOPLASMIC.
CC   -!- DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC       AMERICA AND USSR.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
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CC   ---------------------------------------------------------------------
DR   EMBL; X77266; CAA54482.1; -.
DR   EMBL; X77270; CAA54486.1; -.
DR   HSSP; P15494; 1BTV.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
KW   Pathogenesis-related protein; Allergen; Multigene family.
FT   INIT_MET      0      0
SQ   SEQUENCE   159 AA;  17418 MW;  8D1F3F8FE56106FD CRC64;


  Query Match             95.6%;  Score 782;  DB 1;  Length 159;
  Best Local Similarity   94.3%;  Pred. No. 1.4e-61;
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  Matches  150;  Conservative    4;  Mismatches    5;  Indels    0;  Gaps    0;

Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
          |||||| |||||||||||||||||||||| |||||||||||||| ||||||||||:|||
Db      1 GVFNYEIETTSVIPAARLFKAFILDGDNLVPKVAPQAISSVENIEGNGGPGTIKKINFPE 60

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          | |||||||||||||||||||||||||:||||||||||||||||||| :|||||||
Db     61 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPVGDTLEKISNEIKIVATPDGGCVLKISNKY 120

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          ||||:||||||||||||||||||||||||||||||||
Db    121 HTKGNHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159


RESULT   6
BV1G_BETVE
ID   BV1G_BETVE     STANDARD;      PRT;   159 AA.
AC   P43180;
DT   01-NOV-1995 (Rel. 32, Created)
DT   01-NOV-1995 (Rel. 32, Last sequence update)
DT   01-NOV-1997 (Rel. 35, Last annotation update)
DE   MAJOR POLLEN ALLERGEN BET V 1-G (BET V I-G).
GN   BETV1G.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC   Fagales; Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
RC   TISSUE=POLLEN;
RX   MEDLINE; 95155322.
RA   Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber K.,
RA   Scheiner O., Kraft D., Breiteneder H., Pittenauer E., Schmid E.,
RA   Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;
RT   "Isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT   liquid chromatography, mass spectrometry, and cDNA cloning.";
RL   J. Biol. Chem. 270:2607-2613(1995).
CC   -!- SUBCELLULAR LOCATION: CYTOPLASMIC.
CC   -!- DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC       AMERICA AND USSR.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
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CC   or send an email to license@isb-sib.ch).
CC   ----------------------------------------------------------------------
DR   EMBL; X77269; CAA54485.1; -.
DR   HSSP; P15494; 1BTV.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
KW   Pathogenesis-related protein; Allergen; Multigene family.
FT   INIT_MET      0      0
SQ   SEQUENCE   159 AA;  17420 MW;  BBAEE6DCCE241DBB CRC64;


  Query Match             95.5%;  Score 781;  DB 1;  Length 159;
  Best Local Similarity   93.7%;  Pred. No. 1.7e-61;
  Matches  149;  Conservative    6;  Mismatches    4;  Indels    0;  Gaps    0;

Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
          ||||||:||||||||||||||:|||| |||||||||||||| ||||||||||:|||
Db      1 GVFNYESETTSVIPAARLFKAFILEGDNLIPKVAPQAISSVENIEGNGGPGTIKKINFPE 60

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          | |||||||||||||||||||||||||:||||||||||||||||||| :|||||||
Db     61 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPVGDTLEKISNEIKIVATPDGGCVLKISNKY 120

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          ||||:||||||||||||||||||||||||||||||||
Db    121 HTKGNHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159


RESULT   7
BV1L_BETVE
ID   BV1L_BETVE     STANDARD;      PRT;   159 AA.
AC   P43185;
DT   01-NOV-1995 (Rel. 32, Created)
DT   01-NOV-1995 (Rel. 32, Last sequence update)
DT   01-NOV-1997 (Rel. 35, Last annotation update)
DE   MAJOR POLLEN ALLERGEN BET V 1-L (BET V I-L).
GN   BETV1L.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC   Fagales; Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=POLLEN;
RX   MEDLINE; 95155322.
RA   Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber K.,
RA   Scheiner O., Kraft D., Breiteneder H., Pittenauer E., Schmid E.,
RA   Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;
RT   "Isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT   liquid chromatography, mass spectrometry, and cDNA cloning.";
RL   J. Biol. Chem. 270:2607-2613(1995).
CC   -!- SUBCELLULAR LOCATION: CYTOPLASMIC.
CC   -!- DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC       AMERICA AND USSR.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
CC   ----------------------------------------------------------------------
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CC   ----------------------------------------------------------------------
DR   EMBL; X77273; CAA54489.1; -.
DR   HSSP; P15494; 1BTV.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
KW   Pathogenesis-related protein; Allergen; Multigene family.
FT   INIT_MET      0      0       BY SIMILARITY.
SQ   SEQUENCE   159 AA;  17408 MW;  DE85F4ACC647BE0D CRC64;


  Query Match             94.7%;  Score 775;  DB 1;  Length 159;
  Best Local Similarity   93.1%;  Pred. No. 5.6e-61;
  Matches  148;  Conservative    5;  Mismatches    6;  Indels    0;  Gaps    0;

Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
          |||||||| |||||||:||||||| | |||||||||||| ||||||||||:|||
Db      1 GVFNYETEATSVIPAARMFKAFILDGDKLVPKVAPQAISSVENIEGNGGPGTIKKINFPE 60

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          | |||||||||||||||||||||||||:||||||||||||||||||| :|||||||
Db     61 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPVGDTLEKISNEIKIVATPDGGCVLKISNKY 120

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          ||||:||||||||||||||||||||||||||||||||
Db    121 HTKGNHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159


RESULT   8
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BV1M_BETVE
ID   BV1M_BETVE     STANDARD;      PRT;   159 AA.
AC   P43186;
DT   01-NOV-1995 (Rel. 32, Created)
DT   01-NOV-1995 (Rel. 32, Last sequence update)
DT   01-NOV-1997 (Rel. 35, Last annotation update)
DE   MAJOR POLLEN ALLERGEN BET V 1-M/N (BET V I-M/N).
GN   BETV1M AND BETV1N.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC   Fagales; Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
RC   TISSUE=POLLEN;
RX   MEDLINE; 95155322.
RA   Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber K.,
RA   Scheiner O., Kraft D., Breiteneder H., Pittenauer E., Schmid E.,
RA   Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;
RT   "Isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT   liquid chromatography, mass spectrometry, and cDNA cloning.";
RL   J. Biol. Chem. 270:2607-2613(1995).
CC   -!- SUBCELLULAR LOCATION: CYTOPLASMIC.
CC   -!- DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC       AMERICA AND USSR.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
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CC   ---------------------------------------------------------------------
DR   EMBL; X81972; CAA57497.1; -.
DR   EMBL; X82028; CAA57550.1; -.
DR   HSSP; P15494; 1BTV.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
KW   Pathogenesis-related protein; Allergen; Multigene family.
FT   INIT_MET      0      0
SQ   SEQUENCE   159 AA;  17391 MW;  ABA014F8849985E2 CRC64;


  Query Match             89.9%;  Score 735;  DB 1;  Length 159;
  Best Local Similarity   88.7%;  Pred. No. 1.7e-57;
  Matches  141;  Conservative    8;  Mismatches   10;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
           |||||||:|||||||||||||||||||||| |||||||||||| |||||||||||:|||
Db       1 GVFNYESETTSVIPAARLFKAFILDGDNLIPKVAPQAISSVENIEGNGGPGTIKKITFPE 60

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | |||||:||||||| ||||:||:|||| :||||||| ||||||||||||||||||||
Db      61 GSPFKYVKERVDEVDHANFKYSYSMIEGGALGDTLEKICNEIKIVATPDGGSILKISNKY 120

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           |||||||:||| :|| || || ||||||||||||||||
Db     121 HTKGDHEMKAEHMKAIKEKGEALLRAVESYLLAHSDAYN 159


RESULT   9
BV1B_BETVE
ID   BV1B_BETVE     STANDARD;      PRT;   159 AA.
AC   P45431;
DT   01-NOV-1995 (Rel. 32, Created)
DT   01-NOV-1995 (Rel. 32, Last sequence update)
DT   01-NOV-1997 (Rel. 35, Last annotation update)
DE   MAJOR POLLEN ALLERGEN BET V 1-B (BET V I-B).
GN   BETV1B.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC   Fagales; Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
RC   TISSUE=POLLEN;
RX   MEDLINE; 95155322.
RA   Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber K.,
RA   Scheiner O., Kraft D., Breiteneder H., Pittenauer E., Schmid E.,
RA   Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;
RT   "Isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT   liquid chromatography, mass spectrometry, and cDNA cloning.";
RL   J. Biol. Chem. 270:2607-2613(1995).
CC   -!- SUBCELLULAR LOCATION: CYTOPLASMIC.
CC   -!- DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC       AMERICA AND USSR.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
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CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------
DR   EMBL; X77200; CAA54421.1; -.
DR   HSSP; P15494; 1BTV.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
KW   Pathogenesis-related protein; Allergen; Multigene family.
FT   INIT_MET      0      0
SQ   SEQUENCE   159 AA;  17406 MW;  ECC8D391E0C96267 CRC64;


  Query Match             89.1%;  Score 729;  DB 1;  Length 159;
  Best Local Similarity   88.1%;  Pred. No. 5.8e-57;
  Matches  140;  Conservative    8;  Mismatches   11;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
           |||||||||||||||||||||||:|| | |||||||||||||| ||||||||||:|||
Db       1 GVFNYETETTSVIPAARLFKAFILEGDTLIPKVAPQAISSVENIEGNGGPGTIKKITFPE 60

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | |||||:||||||| ||||:||:|||| :||||||| ||||||||||||||||||||
Db      61 GSPFKYVKERVDEVDHANFKYSYSMIEGGALGDTLEKICNEIKIVATPDGGSILKISNKY 120

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           |||||||:||| :|| || || ||||||||||||||||
Db     121 HTKGDHEMKAEHMKAIKEKGEALLRAVESYLLAHSDAYN 159


RESULT  10
BV1K_BETVE
ID   BV1K_BETVE     STANDARD;      PRT;   159 AA.
AC   P43184;
DT   01-NOV-1995 (Rel. 32, Created)
DT   01-NOV-1995 (Rel. 32, Last sequence update)
DT   01-NOV-1997 (Rel. 35, Last annotation update)
DE   MAJOR POLLEN ALLERGEN BET V 1-K (BET V I-K).
GN   BETV1K.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC   Fagales; Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
RC   TISSUE=POLLEN;
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RX   MEDLINE; 95155322.
RA   Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber K.,
RA   Scheiner O., Kraft D., Breiteneder H., Pittenauer E., Schmid E.,
RA   Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;
RT   "Isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT   liquid chromatography, mass spectrometry, and cDNA cloning.";
RL   J. Biol. Chem. 270:2607-2613(1995).
CC   -!- SUBCELLULAR LOCATION: CYTOPLASMIC.
CC   -!- DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC       AMERICA AND USSR.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
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CC   ---------------------------------------------------------------------
DR   EMBL; X77272; CAA54488.1; -.
DR   HSSP; P15494; 1BTV.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
KW   Pathogenesis-related protein; Allergen; Multigene family.
FT   INIT_MET      0      0
SQ   SEQUENCE   159 AA;  17392 MW;  AAF9E6F197C96517 CRC64;


  Query Match             88.6%;  Score 725;  DB 1;  Length 159;
  Best Local Similarity   87.4%;  Pred. No. 1.3e-56;
  Matches  139;  Conservative    9;  Mismatches   11;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
           ||||||:||||||||||||||||:|| | |||||||||||||| ||||||||||:|||
Db       1 GVFNYESETTSVIPAARLFKAFILEGDTLIPKVAPQAISSVENIEGNGGPGTIKKITFPE 60

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | ||||||:||||||| ||||:||:|||| :|||||||| ||||||||||||||||||||
Db      61 GSPFKYVKERVDEVDHANFKYSYSMIEGGALGDTLEKICNEIKIVATPDGGSILKISNKY 120

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           |||||||:||| :|| || || ||||||||||||||||||
Db     121 HTKGDHEMKAEHMKAIKEKGEALLRAVESYLLAHSDAYN 159


RESULT  11
BV1C_BETVE
ID   BV1C_BETVE     STANDARD;      PRT;   159 AA.
AC   P43176;
DT   01-NOV-1995 (Rel. 32, Created)
DT   01-NOV-1995 (Rel. 32, Last sequence update)
DT   01-NOV-1997 (Rel. 35, Last annotation update)
DE   MAJOR POLLEN ALLERGEN BET V 1-C (BET V I-C).
GN   BETV1C.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC   Fagales; Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
RC   TISSUE=POLLEN;
RX   MEDLINE; 95155322.
RA   Swoboda I., Jilek A., Ferreira F., Engel E., Hoffman-Sommergruber K.,
RA   Scheiner O., Kraft D., Breiteneder H., Pittenauer E., Schmid E.,
RA   Vicente O., Heberle-Bors E., Ahorn H., Breitenbach M.;
RT   "Isoforms of Bet v 1, the major birch pollen allergen, analyzed by
RT   liquid chromatography, mass spectrometry, and cDNA cloning.";
RL   J. Biol. Chem. 270:2607-2613(1995).
CC   -!- SUBCELLULAR LOCATION: CYTOPLASMIC.
CC   -!- DISEASE: MAIN CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC       AMERICA AND USSR.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
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CC   ---------------------------------------------------------------------
DR   EMBL; X77265; CAA54481.1; -.
DR   HSSP; P15494; 1BTV.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
KW   Pathogenesis-related protein; Allergen; Multigene family.
FT   INIT_MET      0      0
SQ   SEQUENCE   159 AA;  17383 MW;  AAEFA495A7C96517 CRC64;


  Query Match             87.7%;  Score 717;  DB 1;  Length 159;
  Best Local Similarity   86.8%;  Pred. No. 6.4e-56;
  Matches  138;  Conservative    9;  Mismatches   12;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
           ||||||:||||||||||||||||:|| | |||||||||||||| ||||||||||:|||
Db       1 GVFNYESETTSVIPAARLFKAFILEGDTLIPKVAPQAISSVENIEGNGGPGTIKKITFPE 60

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | ||||||:||||||| ||||:||:|||| :|||||||| ||||||||||||||||||||
Db      61 GSPFKYVKERVDEVDHANFKYSYSMIEGGALGDTLEKICNEIKIVATPDGGSILKISNKY 120

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           |||||:|:|:| :|| || || ||||||||||||||||||
Db     121 HTKGDQEMKAEHMKAIKEKGEALLRAVESYLLAHSDAYN 159


RESULT  12
MPAG_ALNGL
ID   MPAG_ALNGL     STANDARD;      PRT;   159 AA.
AC   P38948;
DT   01-FEB-1995 (Rel. 31, Created)
DT   01-FEB-1995 (Rel. 31, Last sequence update)
DT   01-NOV-1997 (Rel. 35, Last annotation update)
DE   MAJOR POLLEN ALLERGEN ALN G 1 (ALN G I).
OS   Alnus glutinosa (Alder).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC   Fagales; Betulaceae; Alnus.
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=POLLEN;
RX   MEDLINE; 93094476.
RA   Breiteneder H., Ferreira F., Reikerstorfer A., Duchene M.,
RA   Valenta R., Hoffmann-Sommergruber K., Ebner C., Breitenbach M.,
RA   Kraft D., Scheiner O.;
RT   "Complementary DNA cloning and expression in Escherichia coli of Aln
RT   g I, the major allergen in pollen of alder (Alnus glutinosa).";
RL   J. Allergy Clin. Immunol. 90:909-917(1992).
CC   -!- DISEASE: A CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC       AMERICA AND USSR.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
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CC   ---------------------------------------------------------------------------
DR   EMBL; S50892; AAB24432.1; -.
DR   HSSP; P15494; 1BTV.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
KW   Allergen; Pathogenesis-related protein.
FT   INIT_MET      0      0       BY SIMILARITY.
SQ   SEQUENCE   159 AA;  17207 MW;  8DCFB96C680688A6 CRC64;


  Query Match             82.9%;  Score 678;  DB 1;  Length 159;
  Best Local Similarity   80.5%;  Pred. No. 1.6e-52;
  Matches  128;  Conservative   12;  Mismatches   19;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
           |||||| || |||||||||||||||| | ||||:|:|||||| ||||||||||:|||
Db       1 GVFNYEAETPSVIPAARLFKAFILDGDKLLPKVAPEAVSSVENIEGNGGPGTIKKITFPE 60

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | |||||:|||||  ||||::|||||| :|| |||: ||||||| ||||||||||:
Db      61 GSPFKYVKERVDEVDRVNFKYSFSVIEGGAVGDALEKVCNEIKIVAAPDGGSILKISNKF 120

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           |||||||: |||:|  ||    ||:|||||||||||||
Db     121 HTKGDHEINAEQIKIEKEKAVGLLKAVESYLLAHSDAYN 159


RESULT  13
MPA2_CARBE
ID   MPA2_CARBE     STANDARD;      PRT;   159 AA.
AC   P38950;
DT   01-FEB-1995 (Rel. 31, Created)
DT   01-FEB-1995 (Rel. 31, Last sequence update)
DT   01-NOV-1997 (Rel. 35, Last annotation update)
DE   MAJOR POLLEN ALLERGEN CAR B 1, ISOFORM 2 (CAR B I).
OS   Carpinus betulus (Hornbeam).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC   Fagales; Betulaceae; Carpinus.
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=POLLEN;
RX   MEDLINE; 92293162.
RA   Nedergaard Larsen J., Stroeman P., Ipsen H.;
RT   "PCR based cloning and sequencing of isogenes encoding the tree
RT   pollen major allergen Car b I from Carpinus betulus, hornbeam.";
RL   Mol. Immunol. 29:703-711(1992).
CC   -!- DISEASE: A CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC       AMERICA AND USSR.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
CC   ---------------------------------------------------------------------------
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CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------------
DR   EMBL; X66933; CAA47367.1; -.
DR   HSSP; P15494; 1BTV.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
KW   Allergen; Pathogenesis-related protein; Multigene family.
FT   INIT_MET      0      0       BY SIMILARITY.
SQ   SEQUENCE   159 AA;  17356 MW;  7D55C78195C1C551 CRC64;


  Query Match             77.6%;  Score 635;  DB 1;  Length 159;
  Best Local Similarity   74.8%;  Pred. No. 9.1e-49;
  Matches  119;  Conservative   20;  Mismatches   20;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
           |||||| |||||||||||||||||: | |||:|||:|||||: ||||||||||:| |
Db       1 GVFNYEAETTSVIPAARLFKAFILDGNKLIPKVSPQAVSSVENVEGNGGPGTIKKITFSE 60

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | | ||||:||:|:|||||||||:||||  :|| |||:|:|:|||| | ||||:|||:|:
Db      61 GSPVKYVKERVEEIDHTNFKYNYTVIEGDVLGDKLEKVSHELKIVAAPGGGSIVKISSKF 120

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           | || ||| ||::| :||| | ||||||||||||:  ||
Db     121 HAKGYHEVNAEEMKGAKEMAEKLLRAVESYLLAHTAEYN 159


RESULT  14
MPA1_CARBE
ID   MPA1_CARBE     STANDARD;      PRT;   159 AA.
AC   P38949;
DT   01-FEB-1995 (Rel. 31, Created)
DT   01-FEB-1995 (Rel. 31, Last sequence update)
DT   01-NOV-1997 (Rel. 35, Last annotation update)
DE   MAJOR POLLEN ALLERGEN CAR B 1, ISOFORMS 1A AND 1B (CAR B I).
OS   Carpinus betulus (Hornbeam).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC   Fagales; Betulaceae; Carpinus.
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=POLLEN;
RX   MEDLINE; 92293152.
RA   Nedergaard Larsen J., Stroeman P., Ipsen H.;
RT   "PCR based cloning and sequencing of isogenes encoding the tree
RT   pollen major allergen Car b I from Carpinus betulus, hornbeam.";
RL   Mol. Immunol. 29:703-711(1992).
CC   -!- DISEASE: A CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC       AMERICA AND USSR.
CC   -!- MISCELLANEOUS: THE SEQUENCE SHOWN IS THAT OF ISOFORM 1A.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
CC   ---------------------------------------------------------------------------
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CC   entities requires a license agreement (See http://www.isb-sib.ch/announce/
CC   or send an email to license@isb-sib.ch).
CC   ---------------------------------------------------------------------------
DR   EMBL; X66932; CAA47366.1; -.
DR   EMBL; X66918; CAA47357.1; -.
DR   HSSP; P15494; 1BTV.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
KW   Allergen; Pathogenesis-related protein; Multigene family.
FT   INIT_MET      0      0       BY SIMILARITY.
FT   VARIANT      37     37       V -> A (IN ISOFORM 1B).
FT   VARIANT      62     62       I -> S (IN ISOFORM 1B).
FT   VARIANT     132    132       K -> E (IN ISOFORM 1B).
SQ   SEQUENCE   159 AA;  17271 MW;  21DCD17A38851E8E CRC64;


  Query Match             75.9%;  Score 621;  DB 1;  Length 159;
  Best Local Similarity   73.0%;  Pred. No. 1.5e-47;
  Matches  116;  Conservative   21;  Mismatches   22;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
```

```
          |||||| || ||||||||||:::|||| | |||||| ||||||: ||||||||| |:| |
Db      1 GVFNYEAETPSVIPAARLFKSYVLDGDKLIPKVAPQVISSVENVGGNGGPGTIKNITFAE 60

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          |:|||:||:|||||| |||||:|||| :|| |||:|:|:|||| | ||||:|||:|:
Db     61 GIPFKFVKERVDEVDNANFKYNYTVIEGDVLGDKLEKVSHELKIVAAPGGGSIVKISSKF 120

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          | || ||| ||::| :||| | ||||||||||||:  ||
Db    121 HAKGYHEVNAEKMKGAKEMAEKLLRAVESYLLAHTAEYN 159


RESULT  15
MPAA_CORAV
ID   MPAA_CORAV     STANDARD;      PRT;   159 AA.
AC   Q08407;
DT   01-OCT-1994 (Rel. 30, Created)
DT   01-FEB-1995 (Rel. 31, Last sequence update)
DT   01-NOV-1997 (Rel. 35, Last annotation update)
DE   MAJOR POLLEN ALLERGEN COR A 1, ISOFORMS 5, 6, 11 AND 16 (COR A I).
OS   Corylus avellana (European hazel).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids I;
OC   Fagales; Betulaceae; Corylus.
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=POLLEN;
RX   MEDLINE; 93185652.
RA   Breiteneder H., Ferreira F., Hoffmann-Sommergruber K., Ebner C.,
RA   Breitenbach M., Rumpold H., Kraft D., Scheiner O.;
RT   "Four recombinant isoforms of Cor a I, the major allergen of hazel
RT   pollen, show different IgE-binding properties.";
RL   Eur. J. Biochem. 212:355-362(1993).
CC   -!- DISEASE: A CAUSE OF TYPE I ALLERGIC REACTIONS IN EUROPE, NORTH
CC       AMERICA AND USSR. THE COR A I ISOFORMS DISPLAY DIFFERENT ANTIGENIC
CC       AND ALLERGENIC PROPERTIES.
CC   -!- MISCELLANEOUS: THE SEQUENCE SHOWN IS THAT OF CLONE COR A I/5.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
CC   ----------------------------------------------------------------------
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CC   or send an email to license@isb-sib.ch).
CC   ----------------------------------------------------------------------
DR   EMBL; X70999; CAA50327.1; -.
DR   EMBL; X71000; CAA50328.1; -.
DR   EMBL; X70997; CAA50325.1; -.
DR   EMBL; X70998; CAA50326.1; -.
DR   PIR; S30053; S30053.
DR   HSSP; P15494; 1BTV.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
KW   Allergen; Pathogenesis-related protein; Multigene family.
FT   INIT_MET      0      0
FT   VARIANT       7      7       V -> A (IN CLONE COR A 1/11).
FT   VARIANT      10     10       P -> T (IN CLONE COR A 1/11).
FT   VARIANT      14     14       P -> S (IN CLONE COR A 1/16).
FT   VARIANT      45     45       E -> G (IN CLONE COR A 1/16).
FT   VARIANT      80     80       T -> K (IN CLONE COR A 1/6 AND 1/16).
FT   VARIANT     100    100       H -> S (IN CLONE COR A 1/6 AND 1/16).
FT   VARIANT     113    113       I -> T (IN CLONE COR A 1/16).
FT   VARIANT     133    133       M -> I (IN CLONE COR A 1/11).
SQ   SEQUENCE   159 AA;  17381 MW;  E0F5E2A218E8D768 CRC64;


  Query Match             74.6%;  Score 610;  DB 1;  Length 159;
  Best Local Similarity   71.7%;  Pred. No. 1.4e-46;
  Matches  114;  Conservative   22;  Mismatches   23;  Indels    0;  Gaps    0;

Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
          |||||| || |||||||||||:::|||| | ||||||||:||||: ||||||||| |:| |
Db      1 GVFNYEVETPSVIPAARLFKSYVLDGDKLIPKVAPQAITSVENVEGNGGPGTIKNITFGE 60

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          |  :||||:||||||:||| |:|:|||| :|| |||: :|:|||| | ||||||||:|:
Db     61 GSRYKYVKERVDEVDNTNFTYSYTVIEGDVLGDKLEKVCHELKIVAAPGGGSILKISSKF 120

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          | ||||: ||::| :||| | ||||||:||||||  ||
Db    121 HAKGDHEINAEEMKGAKEMAEKLLRAVETYLLAHSAEYN 159


Search completed: December 11, 2000, 10:43:18
Job time: 110 sec
```

GenCore version 4.5


OM protein - protein search, using sw model

Run on: December 11, 2000, 10:41:14 ; Search time 18.74 Seconds
(without alignments)
792.235 Million cell updates/sec

Title: US-09-270-910-37-COPY
Perfect score: 818
Sequence: 1 GVFNYETETTSVIPAARLFK.....GETLLRAVESYLLAHSDAYN 159

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 297973 seqs, 93374136 residues

Total number of hits satisfying chosen parameters: 297973

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : SPTREMBL_14:*
1: sp_archea:*
2: sp_bacteria:*
3: sp_fungi:*
4: sp_human:*
5: sp_invertebrate:*
6: sp_mammal:*
7: sp_mhc:*
8: sp_organelle:*
9: sp_phage:*
10: sp_plant:*
11: sp_rodent:*
12: sp_virus:*
13: sp_vertebrate:*
14: sp_unclassified:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

| Result No. | Score | % Query Match | Length | DB | ID | Description |
|---|---|---|---|---|---|---|
| 1 | 809 | 98.9 | 160 | 10 | Q96366 | Q96366 betula verr |
| 2 | 807 | 98.7 | 160 | 10 | O24642 | O24642 betula verr |
| 3 | 805 | 98.4 | 160 | 10 | Q42499 | Q42499 betula verr |
| 4 | 803 | 98.2 | 160 | 10 | O23752 | O23752 betula verr |
| 5 | 802 | 98.0 | 160 | 10 | Q96371 | Q96371 betula verr |
| 6 | 801 | 97.9 | 160 | 10 | Q9SCH8 | Q9sch8 betula verr |
| 7 | 800 | 97.8 | 160 | 10 | Q96370 | Q96370 betula verr |
| 8 | 799 | 97.7 | 160 | 10 | Q9SCI0 | Q9sci0 betula verr |
| 9 | 799 | 97.7 | 160 | 10 | Q9SCH9 | Q9sch9 betula verr |
| 10 | 798 | 97.6 | 160 | 10 | Q96365 | Q96365 betula verr |
| 11 | 798 | 97.6 | 160 | 10 | Q9SYW1 | Q9syw1 betula verr |
| 12 | 796 | 97.3 | 160 | 10 | Q96368 | Q96368 betula verr |
| 13 | 796 | 97.3 | 160 | 10 | Q9SCI2 | Q9sci2 betula verr |
| 14 | 795 | 97.2 | 160 | 10 | Q9SYW0 | Q9syw0 betula verr |
| 15 | 794 | 97.1 | 160 | 10 | Q9SCI3 | Q9sci3 betula verr |
| 16 | 793 | 96.9 | 159 | 10 | O23748 | O23748 betula verr |
| 17 | 793 | 96.9 | 160 | 10 | Q96367 | Q96367 betula verr |
| 18 | 793 | 96.9 | 160 | 10 | O23753 | O23753 betula verr |
| 19 | 791 | 96.7 | 160 | 10 | O23754 | O23754 betula verr |
| 20 | 790 | 96.6 | 160 | 10 | Q39426 | Q39426 betula verr |
| 21 | 788 | 96.3 | 160 | 10 | O23751 | O23751 betula verr |
| 22 | 787 | 96.2 | 160 | 10 | Q9SYW2 | Q9syw2 betula verr |
| 23 | 784 | 95.8 | 160 | 10 | Q9ZS39 | Q9zs39 betula verr |
| 24 | 783 | 95.7 | 160 | 10 | Q9SCH5 | Q9sch5 betula verr |
| 25 | 782 | 95.6 | 160 | 10 | Q39431 | Q39431 betula verr |
| 26 | 777 | 95.0 | 159 | 10 | O23746 | O23746 betula verr |
| 27 | 770 | 94.1 | 160 | 10 | Q9SCH6 | Q9sch6 betula verr |
| 28 | 768 | 93.9 | 159 | 10 | O23750 | O23750 betula verr |
| 29 | 746 | 91.2 | 160 | 10 | Q9ZS38 | Q9zs38 betula verr |
| 30 | 739 | 90.3 | 160 | 10 | Q39429 | Q39429 betula verr |
| 31 | 738 | 90.2 | 159 | 10 | O23749 | O23749 betula verr |
| 32 | 736 | 90.0 | 160 | 10 | Q39428 | Q39428 betula verr |
| 33 | 735 | 89.9 | 159 | 10 | O23747 | O23747 betula verr |
| 34 | 731 | 89.4 | 160 | 10 | Q39427 | Q39427 betula verr |
| 35 | 702 | 85.8 | 160 | 10 | Q39417 | Q39417 betula verr |
| 36 | 698 | 85.3 | 159 | 10 | Q39420 | Q39420 betula verr |
| 37 | 695 | 85.0 | 160 | 10 | Q39430 | Q39430 betula verr |
| 38 | 695 | 85.0 | 160 | 10 | Q39453 | Q39453 corylus ave |
| 39 | 683 | 83.5 | 160 | 10 | Q39425 | Q39425 betula verr |
| 40 | 659 | 80.6 | 161 | 10 | Q96382 | Q96382 carpinus be |
| 41 | 640 | 78.2 | 160 | 10 | Q96378 | Q96378 carpinus be |
| 42 | 639 | 78.1 | 161 | 10 | Q96381 | Q96381 carpinus be |
| 43 | 638 | 78.0 | 160 | 10 | Q96377 | Q96377 carpinus be |
| 44 | 629 | 76.9 | 160 | 10 | Q96379 | Q96379 carpinus be |
| 45 | 622 | 76.0 | 160 | 10 | Q96503 | Q96503 carpinus be |

ALIGNMENTS

RESULT 1
Q96366
ID Q96366 PRELIMINARY; PRT; 160 AA.
AC Q96366;
DT 01-FEB-1997 (TrEMBLrel. 02, Created)
DT 01-FEB-1997 (TrEMBLrel. 02, Last sequence update)
DT 01-JUN-2000 (TrEMBLrel. 14, Last annotation update)
DE POLLEN ALLERGEN BET V 1.
OS Betula verrucosa (White birch) (Betula pendula).
OC Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC Betulaceae; Betula.
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=POLLEN OBTAINED FROM ALLERGON, SWEDEN;
RA Larsen J.N.;
RL Submitted (SEP-1996) to the EMBL/GenBank/DDBJ databases.
CC -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC PROTEIN.
DR EMBL; Z80101; CAB02156.1; -.
DR HSSP; P15494; 1BTV.
DR MENDEL; 30889; Betve;1174;30889.
DR INTERPRO; IPR000916; -.
DR PFAM; PF00407; Bet_v_I; 1.
DR PRINTS; PR00634; BETALLERGEN.
DR PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
DR PRODOM; PD000531; -; 1.
KW Pathogenesis-related protein.
SQ SEQUENCE 160 AA; 17557 MW; B2174110A9588AD4 CRC64;

Query Match 98.9%; Score 809; DB 10; Length 160;
Best Local Similarity 98.1%; Pred. No. 8.4e-62;
Matches 156; Conservative 1; Mismatches 2; Indels 0; Gaps 0;

```
Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
           |||||||||||||||||||||||||||||||||||||||||| ||||||||||||||||
Db       2 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 61

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | ||||||||||||||||||||||||||||:||||||||||||||||||||||||||||||
Db      62 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPVGDTLEKISNEIKIVATPDGGSILKISNKY 121
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Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          |||||||||||||||||||||||||||||||||||||||
Db    122 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 160


RESULT   2
O24642
ID   O24642      PRELIMINARY;      PRT;   160 AA.
AC   O24642;
DT   01-JAN-1998 (TrEMBLrel. 05, Created)
DT   01-JAN-1998 (TrEMBLrel. 05, Last sequence update)
DT   01-JUN-2000 (TrEMBLrel. 14, Last annotation update)
DE   POLLEN ALLERGEN BETV1.
GN   BETV1.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC   Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=POLLEN;
RA   Friedl-Hajek R., Radauer C., Hoffmann-Sommergruber K., Leberl K.,
RA   Riordain G., Scheiner O., Breiteneder H.;
RL   Submitted (OCT-1997) to the EMBL/GenBank/DDBJ databases.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
DR   EMBL; AJ002109; CAA05189.1; -.
DR   EMBL; AJ002107; CAA05187.1; -.
DR   HSSP; P15494; 1BTV.
DR   MENDEL; 24383; Betve;1174;24383.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
DR   PRODOM; PD000531; -; 1.
KW   Pathogenesis-related protein.
SQ   SEQUENCE   160 AA;  17589 MW;  D8A04110BD1CDAC0 CRC64;


  Query Match             98.7%;  Score 807;  DB 10;  Length 160;
  Best Local Similarity   98.1%;  Pred. No. 1.2e-61;
  Matches  156;  Conservative    1;  Mismatches    2;  Indels    0;  Gaps    0;

Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
          |||||||||||||||||||||||||||||||||||||||||||||||||| ||||||||||||||
Db      2 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 61

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          | ||||||||||||||||||||||||||||:||||||||||||||||||||||||||||||||
Db     62 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPMGDTLEKISNEIKIVATPDGGSILKISNKY 121

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          |||||||||||||||||||||||||||||||||||||||
Db    122 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 160


RESULT   3
Q42499
ID   Q42499      PRELIMINARY;      PRT;   160 AA.
AC   Q42499;
DT   01-NOV-1996 (TrEMBLrel. 01, Created)
DT   01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
DT   01-JUN-2000 (TrEMBLrel. 14, Last annotation update)
DE   MAJOR ALLERGEN BET V 1.
GN   BETV1.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC   Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=LEAF;
RA   Hoffmann-Sommergruber K.;
RL   Submitted (MAY-1996) to the EMBL/GenBank/DDBJ databases.
RN   [2]
RP   SEQUENCE FROM N.A.
RC   TISSUE=POLLEN;
RA   Friedl-Hajek R., Radauer C., O'Riordain G., Hoffmann-Sommergruber K.,
RA   Leberl K., Scheiner O., Breiteneder H.;
RT   "New Betv1 isoforms including a naturally occurring truncated form of
RT   the protein derived from Austrian birch pollen.";
RL   Submitted (JUN-1998) to the EMBL/GenBank/DDBJ databases.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
DR   EMBL; Z72432; CAA96541.1; -.
DR   EMBL; Z72429; CAA96538.1; -.
DR   EMBL; AJ006907; CAA07322.1; -.
DR   HSSP; P15494; 1BTV.
DR   MENDEL; 30817; Betve;1174;30817.
DR   MENDEL; 36840; Betve;1174;36840.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
DR   PRODOM; PD000531; -; 1.
KW   Pathogenesis-related protein.
SQ   SEQUENCE   160 AA;  17541 MW;  E3950410AF8B5096 CRC64;


  Query Match             98.4%;  Score 805;  DB 10;  Length 160;
  Best Local Similarity   98.1%;  Pred. No. 1.8e-61;
  Matches  156;  Conservative    0;  Mismatches    3;  Indels    0;  Gaps    0;

Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
          |||||||| ||||||||||||||||||||||||||||||||| ||||||||||||||||
Db      2 GVFNYETEATSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 61

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          | ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     62 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 121

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          |||||||||||||||||||||||||||||||||||||||
Db    122 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 160


RESULT   4
O23752
ID   O23752      PRELIMINARY;      PRT;   160 AA.
AC   O23752;
DT   01-JAN-1998 (TrEMBLrel. 05, Created)
DT   01-JAN-1998 (TrEMBLrel. 05, Last sequence update)
DT   01-JUN-2000 (TrEMBLrel. 14, Last annotation update)
DE   POLLEN ALLERGEN BETV1.
GN   BETV1.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC   Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=POLLEN;
RA   Friedl-Hajek R., Radauer C., Hoffmann-Sommergruber K., Leberl K.,
RA   Riordain G., Scheiner O., Breiteneder H.;
RL   Submitted (OCT-1997) to the EMBL/GenBank/DDBJ databases.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
DR   EMBL; AJ002108; CAA05188.1; -.
DR   HSSP; P15494; 1BTV.
DR   MENDEL; 26841; Betve;1174;26841.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
DR   PRODOM; PD000531; -; 1.
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KW   Pathogenesis-related protein.
SQ   SEQUENCE   160 AA;  17523 MW;  69BB110BBBDA1ADD CRC64;


  Query Match             98.2%;  Score 803;  DB 10;  Length 160;
  Best Local Similarity   98.1%;  Pred. No. 2.7e-61;
  Matches  156;  Conservative    0;  Mismatches    3;  Indels    0;  Gaps    0;

Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
          |||||||||||||||||||||||||||| ||||||||||||| ||||||||||||||
Db      2 GVFNYETETTSVIPAARLFKAFILDGDNLVPKVAPQAISSVENIEGNGGPGTIKKISFPE 61

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          | ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     62 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 121

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          |||||||||||||||||||||||||||||||||||||||
Db    122 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 160


RESULT   5
Q96371
ID   Q96371      PRELIMINARY;      PRT;   160 AA.
AC   Q96371;
DT   01-FEB-1997 (TrEMBLrel. 02, Created)
DT   01-FEB-1997 (TrEMBLrel. 02, Last sequence update)
DT   01-JUN-2000 (TrEMBLrel. 14, Last annotation update)
DE   POLLEN ALLERGEN BET V 1.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC   Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=POLLEN OBTAINED FROM ALLERGON, SWEDEN;
RA   Larsen J.N.;
RL   Submitted (SEP-1996) to the EMBL/GenBank/DDBJ databases.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
DR   EMBL; Z80106; CAB02161.1; -.
DR   HSSP; P15494; 1BTV.
DR   MENDEL; 30893; Betve;1174;30893.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
DR   PRODOM; PD000531; -; 1.
KW   Pathogenesis-related protein.
SQ   SEQUENCE   160 AA;  17670 MW;  69B4410BBA6A1AC6 CRC64;


  Query Match             98.0%;  Score 802;  DB 10;  Length 160;
  Best Local Similarity   98.1%;  Pred. No. 3.3e-61;
  Matches  156;  Conservative    0;  Mismatches    3;  Indels    0;  Gaps    0;

Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
          |||||||||||||||||||||||||||||||||||||||| ||||||||||||||
Db      2 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 61

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          | ||||||||||||||||||||||||||||||||||||||||||||||||||||||||||
Db     62 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 121

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          |||||||||||||||| ||||||||||||||||||||||
Db    122 HTKGDHEVKAEQVKASKEMRETLLRAVESYLLAHSDAYN 160


RESULT   6
Q9SCH8
ID   Q9SCH8      PRELIMINARY;      PRT;   160 AA.
AC   Q9SCH8;
DT   01-MAY-2000 (TrEMBLrel. 13, Created)
DT   01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
DT   01-JUN-2000 (TrEMBLrel. 14, Last annotation update)
DE   POLLEN ALLERGEN BETV1, ISOFORM AT50.
GN   BETV1.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC   Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=POLLEN;
RA   Friedl-Hajek R., Radauer C., Riordain G., Hoffmann-Sommergruber K.,
RA   Leberl K., Scheiner O., Breiteneder H.;
RT   "New Bet v 1 isoforms including a naturally occurring truncated form
RT   of the protein derived from Austrian birch pollen.";
RL   Mol. Immunol. 36:639-645(1999).
DR   EMBL; AJ006911; CAA07326.1; -.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
SQ   SEQUENCE   160 AA;  17631 MW;  D8A9575C4C393DA0 CRC64;


  Query Match             97.9%;  Score 801;  DB 10;  Length 160;
  Best Local Similarity   96.9%;  Pred. No. 4e-61;
  Matches  154;  Conservative    3;  Mismatches    2;  Indels    0;  Gaps    0;

Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
          |||||||||||:|||||||:|||||||||||||||||||||| ||||||||||||||
Db      2 GVFNYETETTSLIPAARLFRAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 61

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          | |||||||||||||||||||||||||||:|||||||||||||||||||||||||||||
Db     62 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPMGDTLEKISNEIKIVATPDGGSILKISNKY 121

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          |||||||||||||||||||||||||||||||||||||||
Db    122 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 160


RESULT   7
Q96370
ID   Q96370      PRELIMINARY;      PRT;   160 AA.
AC   Q96370;
DT   01-FEB-1997 (TrEMBLrel. 02, Created)
DT   01-FEB-1997 (TrEMBLrel. 02, Last sequence update)
DT   01-JUN-2000 (TrEMBLrel. 14, Last annotation update)
DE   POLLEN ALLERGEN BET V 1.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC   Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=POLLEN OBTAINED FROM ALLERGON, SWEDEN;
RA   Larsen J.N.;
RL   Submitted (SEP-1996) to the EMBL/GenBank/DDBJ databases.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
DR   EMBL; Z80105; CAB02160.1; -.
DR   HSSP; P15494; 1BTV.
DR   MENDEL; 30892; Betve;1174;30892.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
DR   PRODOM; PD000531; -; 1.
KW   Pathogenesis-related protein.
SQ   SEQUENCE   160 AA;  17541 MW;  D8AF110BBD1CDADB CRC64;
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  Query Match             97.8%;  Score 800;  DB 10;  Length 160;
  Best Local Similarity   97.5%;  Pred. No. 4.9e-61;
  Matches  155;  Conservative    1;  Mismatches    3;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
           |||||||||||||||||||||||||||||| |||||||||||||| ||||||||||||||||
Db       2 GVFNYETETTSVIPAARLFKAFILDGDNLVPKVAPQAISSVENIEGNGGPGTIKKISFPE 61

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | ||||||||||||||||||||||||||:||||||||||||||||||||||||||||||||
Db      62 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPMGDTLEKISNEIKIVATPDGGSILKISNKY 121

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           |||||||||||||||||||||||||||||||||||||||
Db     122 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 160


RESULT   8
Q9SCI0
ID   Q9SCI0      PRELIMINARY;      PRT;   160 AA.
AC   Q9SCI0;
DT   01-MAY-2000 (TrEMBLrel. 13, Created)
DT   01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
DT   01-JUN-2000 (TrEMBLrel. 14, Last annotation update)
DE   POLLEN ALLERGEN BETV1, ISOFORM AT37.
GN   BETV1.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC   Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=POLLEN;
RA   Friedl-Hajek R., Radauer C., Riordain G., Hoffmann-Sommergruber K.,
RA   Leberl K., Scheiner O., Breiteneder H.;
RT   "New Bet v 1 isoforms including a naturally occurring truncated form
RT   of the protein derived from Austrian birch pollen.";
RL   Mol. Immunol. 36:639-645(1999).
DR   EMBL; AJ006908; CAA07323.1; -.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
SQ   SEQUENCE   160 AA;  17572 MW;  99A3581E5B3A03FB CRC64;


  Query Match             97.7%;  Score 799;  DB 10;  Length 160;
  Best Local Similarity   96.9%;  Pred. No. 5.9e-61;
  Matches  154;  Conservative    2;  Mismatches    3;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
           |||||||||||||||||||||||||||||||||||||||| ||||||||||||||||||||
Db       2 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 61

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | |||||||||||||||||||||||||||||||||||||||||||||||| :|||||||
Db      62 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGCVLKISNKY 121

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           ||||:|||||||||||||||||||||||||||||||||||
Db     122 HTKGNHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 160


RESULT   9
Q9SCH9
ID   Q9SCH9      PRELIMINARY;      PRT;   160 AA.
AC   Q9SCH9;
DT   01-MAY-2000 (TrEMBLrel. 13, Created)
DT   01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
DT   01-JUN-2000 (TrEMBLrel. 14, Last annotation update)
DE   POLLEN ALLERGEN BETV1, ISOFORM AT45.
GN   BETV1.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC   Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=POLLEN;
RA   Friedl-Hajek R., Radauer C., Riordain G., Hoffmann-Sommergruber K.,
RA   Leberl K., Scheiner O., Breiteneder H.;
RT   "New Bet v 1 isoforms including a naturally occurring truncated form
RT   of the protein derived from Austrian birch pollen.";
RL   Mol. Immunol. 36:639-645(1999).
DR   EMBL; AJ006910; CAA07325.1; -.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
SQ   SEQUENCE   160 AA;  17615 MW;  5A2A67BCCC45CA3E CRC64;


  Query Match             97.7%;  Score 799;  DB 10;  Length 160;
  Best Local Similarity   96.9%;  Pred. No. 5.9e-61;
  Matches  154;  Conservative    3;  Mismatches    2;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
           |||||||||:|||||||||||||||||||||||||||||| ||||||||||:|||
Db       2 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKINFPE 61

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | |||||||||||||||||||||||||:||||||||||||||||||||||||||||||||
Db      62 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPMGDTLEKISNEIKIVATPDGGSILKISNKY 121

Qy     121 HTKGDHEVKALQVKASKEMGETLLRAVESYLLAHSDAYN 159
           ||||:|||||||||||||||||||||||||||||||||||
Db     122 HTKGNHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 160


RESULT  10
Q96365
ID   Q96365      PRELIMINARY;      PRT;   160 AA.
AC   Q96365;
DT   01-FEB-1997 (TrEMBLrel. 02, Created)
DT   01-FEB-1997 (TrEMBLrel. 02, Last sequence update)
DT   01-JUN-2000 (TrEMBLrel. 14, Last annotation update)
DE   POLLEN ALLERGEN BET V 1.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC   Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=POLLEN OBTAINED FROM ALLERGON, SWEDEN;
RA   Larsen J.N.;
RL   Submitted (SEP-1996) to the EMBL/GenBank/DDBJ databases.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
DR   EMBL; Z80100; CAB02155.1; -.
DR   HSSP; P15494; 1BTV.
DR   MENDEL; 30888; Betve;1174;30888.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
DR   PRODOM; PD000531; -; 1.
KW   Pathogenesis-related protein.
SQ   SEQUENCE   160 AA;  17558 MW;  4200581E49B893E9 CRC64;


  Query Match             97.6%;  Score 798;  DB 10;  Length 160;
  Best Local Similarity   96.2%;  Pred. No. 7.2e-61;
  Matches  153;  Conservative    3;  Mismatches    3;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
           |||||||||||||||||||||||||||||||||||||||| ||||||||||||||||
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Db      2 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 61

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          | ||||||||||||||||||||||||||||||:||||||||||||||||||| :|||||||
Db     62 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPVGDTLEKISNEIKIVATPDGGCVLKISNKY 121

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          ||||:||||||||||||||||||||||||||||||||||
Db    122 HTKGNHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 160


RESULT  11
Q9SYW1
ID   Q9SYW1      PRELIMINARY;      PRT;   160 AA.
AC   Q9SYW1;
DT   01-MAY-2000 (TrEMBLrel. 13, Created)
DT   01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
DT   01-JUN-2000 (TrEMBLrel. 14, Last annotation update)
DE   ISOALLERGEN BET V 1 B2.
GN   BETV1B2.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC   Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A.
RA   Son D.Y., Haustein D., Vieths S.;
RT   "Cloning and characterization of isoforms of the major birchpollen
RT   allergen Bet v 1.";
RL   Submitted (JAN-1999) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; AF124838; AAD26561.1; -.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
SQ   SEQUENCE   160 AA;  17565 MW;  E9B5F580BBDA1AC5 CRC64;


  Query Match             97.6%;  Score 798;  DB 10;  Length 160;
  Best Local Similarity   97.5%;  Pred. No. 7.2e-61;
  Matches  155;  Conservative    0;  Mismatches    4;  Indels    0;  Gaps    0;

Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
          |||||||||||||||||||||||||||||||||||||||||||| ||||||||||||||
Db      2 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 61

Qy     61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
          | ||||||||||||||||||||||||||||||||||||||||||||| ||||||||
Db     62 GFPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGPILKISNKY 121

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
          |||||||||||||||||||||||||||| ||||||||
Db    122 HTKGDHEVKAEQVKASKEMGETLLRAVESYPLAHSDAYN 160


RESULT  12
Q96368
ID   Q96368      PRELIMINARY;      PRT;   160 AA.
AC   Q96368;
DT   01-FEB-1997 (TrEMBLrel. 02, Created)
DT   01-FEB-1997 (TrEMBLrel. 02, Last sequence update)
DT   01-JUN-2000 (TrEMBLrel. 14, Last annotation update)
DE   POLLEN ALLERGEN BET V 1.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC   Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=POLLEN OBTAINED FROM ALLERGON, SWEDEN;
RA   Larsen J.N.;
RL   Submitted (SEP-1996) to the EMBL/GenBank/DDBJ databases.
CC   -!- SIMILARITY: BELONGS TO THE BETVI FAMILY OF PATHOGENESIS-RELATED
CC       PROTEIN.
DR   EMBL; Z80103; CAB02158.1; -.
DR   HSSP; P15494; 1BTV.
DR   MENDEL; 30891; Betve;1174;30891.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
DR   PRODOM; PD000531; -; 1.
KW   Pathogenesis-related protein.
SQ   SEQUENCE   160 AA;  17466 MW;  430D72F300B9BBCE CRC64;


  Query Match             97.3%;  Score 796;  DB 10;  Length 160;
  Best Local Similarity   96.9%;  Pred. No. 1.1e-60;
  Matches  154;  Conservative    2;  Mismatches    3;  Indels    0;  Gaps    0;

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Db      2 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPG 61

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Db     62 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGCVLKISNKY 121

Qy    121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
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AC   Q9SCI2;
DT   01-MAY-2000 (TrEMBLrel. 13, Created)
DT   01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
DT   01-JUN-2000 (TrEMBLrel. 14, Last annotation update)
DE   POLLEN ALLERGEN BETV1, ISOFORM AT10.
GN   BETV1.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC   Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=POLLEN;
RA   Friedl-Hajek R., Radauer C., Riordain G., Hoffmann-Sommergruber K.,
RA   Leberl K., Scheiner O., Breiteneder H.;
RT   "New Bet v 1 isoforms including a naturally occurring truncated form
RT   of the protein derived from Austrian birch pollen.";
RL   Mol. Immunol. 36:639-645(1999).
DR   EMBL; AJ006904; CAA07319.1; -.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
SQ   SEQUENCE   160 AA;  17520 MW;  EB3128ED2A630A23 CRC64;


  Query Match             97.3%;  Score 796;  DB 10;  Length 160;
  Best Local Similarity   96.9%;  Pred. No. 1.1e-60;
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Qy      1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
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DT   01-MAY-2000 (TrEMBLrel. 13, Created)
DT   01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
DT   01-JUN-2000 (TrEMBLrel. 14, Last annotation update)
DE   ISOALLERGEN BET V 1 B1.
GN   BETV1B1.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC   Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A.
RA   Son D.Y., Haustein D., Vieths S.;
RT   "Cloning and characterization of isoforms of the major birchpollen
RT   allergen Bet v 1.";
RL   Submitted (JAN-1999) to the EMBL/GenBank/DDBJ databases.
DR   EMBL; AF124837; AAD26560.1; -.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
SQ   SEQUENCE   160 AA;  17530 MW;  4200581E49B88CD4 CRC64;


  Query Match            97.2%;  Score 795;  DB 10;  Length 160;
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  Matches  152;  Conservative    4;  Mismatches    3;  Indels    0;  Gaps    0;

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           |||||||||||||||||||||||||||||||||||||||||||| ||||||||||||||||
Db       2 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENIEGNGGPGTIKKISFPE 61

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
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DT   01-MAY-2000 (TrEMBLrel. 13, Created)
DT   01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
DT   01-JUN-2000 (TrEMBLrel. 14, Last annotation update)
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GN   BETV1.
OS   Betula verrucosa (White birch) (Betula pendula).
OC   Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
OC   Magnoliophyta; eudicotyledons; Rosidae; eurosids I; Fagales;
OC   Betulaceae; Betula.
RN   [1]
RP   SEQUENCE FROM N.A.
RC   TISSUE=POLLEN;
RA   Friedl-Hajek R., Radauer C., Riordain G., Hoffmann-Sommergruber K.,
RA   Leberl K., Scheiner O., Breiteneder H.;
RT   "New Bet v 1 isoforms including a naturally occurring truncated form
RT   of the protein derived from Austrian birch pollen.";
RL   Mol. Immunol. 36:639-645(1999).
DR   EMBL; AJ006903; CAA07318.1; -.
DR   INTERPRO; IPR000916; -.
DR   PFAM; PF00407; Bet_v_I; 1.
DR   PRINTS; PR00634; BETALLERGEN.
DR   PROSITE; PS00451; PATHOGENESIS_BETVI; 1.
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Search completed: December 11, 2000, 10:43:04
Job time: 110 sec
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GenCore version 4.5


OM protein - protein search, using sw model

Run on: December 11, 2000, 10:38:23 ; Search time 12.26 Seconds
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Title: US-09-270-910-37-COPY
Perfect score: 818
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Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 164575 seqs, 16761186 residues

Total number of hits satisfying chosen parameters: 164575

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

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| 1 | 810 | 99.0 | 160 | 1 | US-07-847-010-23 | Sequence 23, Appl |
| 2 | 678 | 82.9 | 160 | 1 | US-07-847-010-3 | Sequence 3, Appli |
| 3 | 616 | 75.3 | 160 | 1 | US-07-847-010-14 | Sequence 14, Appl |
| 4 | 616 | 75.3 | 160 | 1 | US-07-847-010-17 | Sequence 17, Appl |
| 5 | 610 | 74.6 | 160 | 1 | US-07-847-010-11 | Sequence 11, Appl |
| 6 | 603 | 73.7 | 160 | 1 | US-07-847-010-20 | Sequence 20, Appl |
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| 8 | 276.5 | 33.8 | 154 | 1 | US-08-363-010-1 | Sequence 1, Appli |
| 9 | 274.5 | 33.6 | 154 | 2 | US-08-911-434A-4 | Sequence 4, Appli |
| 10 | 240 | 29.3 | 158 | 3 | US-08-199-219-6 | Sequence 6, Appli |
| 11 | 79 | 9.7 | 669 | 2 | US-08-357-533A-8 | Sequence 8, Appli |
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| 14 | 78 | 9.5 | 1442 | 2 | US-08-316-650-12 | Sequence 12, Appl |
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| 16 | 75.5 | 9.2 | 3135 | 1 | US-08-323-170B-2 | Sequence 2, Appli |
| 17 | 72 | 8.8 | 1008 | 2 | US-08-680-326-30 | Sequence 30, Appl |
| 18 | 71.5 | 8.7 | 341 | 2 | US-08-538-711A-8 | Sequence 8, Appli |
| 19 | 71.5 | 8.7 | 353 | 2 | US-08-538-711A-7 | Sequence 7, Appli |
| 20 | 71.5 | 8.7 | 522 | 5 | RE34606-6 | Patent No. RE34,60 |
| 21 | 70 | 8.6 | 1577 | 2 | US-08-793-824-2 | Sequence 2, Appli |
| 22 | 69.5 | 8.5 | 836 | 1 | US-08-426-627-6 | Sequence 6, Appli |
| 23 | 69.5 | 8.5 | 837 | 1 | US-08-426-627-23 | Sequence 23, Appl |
| 24 | 69 | 8.4 | 436 | 3 | US-08-669-378-2 | Sequence 2, Appli |
| 25 | 69 | 8.4 | 436 | 3 | US-08-669-378-4 | Sequence 4, Appli |
| 26 | 69 | 8.4 | 436 | 3 | US-08-669-378-6 | Sequence 6, Appli |
| 27 | 69 | 8.4 | 436 | 3 | US-08-669-378-10 | Sequence 10, Appl |
| 28 | 69 | 8.4 | 436 | 3 | US-08-669-378-12 | Sequence 12, Appl |
| 29 | 69 | 8.4 | 997 | 2 | US-08-387-942C-4 | Sequence 4, Appli |
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| 40 | 66 | 8.1 | 310 | 1 | US-08-129-456A-37 | Sequence 37, Appl |
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| 43 | 66 | 8.1 | 720 | 2 | US-08-541-780-2 | Sequence 2, Appli |
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ALIGNMENTS

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RESULT 1
US-07-847-010-23
; Sequence 23, Application US/07847010
; Patent No. 5693495
; GENERAL INFORMATION:
;   APPLICANT: Breiteneder, Heimo
;   APPLICANT: Reikerstorfer, Arnold
;   APPLICANT: Valenta, Rudolf
;   APPLICANT: Hoffmann - Sommergruber, Karin
;   APPLICANT: Breitenbach, Michael
;   APPLICANT: Kraft, Dietrich
;   APPLICANT: Rumpold, Helmut
;   APPLICANT: Scheiner, Otto
;   APPLICANT: Ebner, Christof
;   APPLICANT: Ferreira, Fatima
;   TITLE OF INVENTION: Allergens of Alder Pollen and
;   TITLE OF INVENTION: Applications Thereof
;   NUMBER OF SEQUENCES: 23
;   CORRESPONDENCE ADDRESS:
;     ADDRESSEE: Pennie & Edmonds
;     STREET: 1155 Avenue of the Americas
;     CITY: New York
;     STATE: New York
;     COUNTRY: U.S.A.
;     ZIP: 10036-2711
;   COMPUTER READABLE FORM:
;     MEDIUM TYPE: Floppy disk
;     COMPUTER: IBM PC compatible
;     OPERATING SYSTEM: PC-DOS/MS-DOS
;     SOFTWARE: PatentIn Release #1.0, Version #1.25
;   CURRENT APPLICATION DATA:
;     APPLICATION NUMBER: US/07/847,010
;     FILING DATE: 01-JUN-1992
;     CLASSIFICATION: 435
;   ATTORNEY/AGENT INFORMATION:
;     NAME: Jones III, Harry C
;     REGISTRATION NUMBER: 20,280
;     REFERENCE/DOCKET NUMBER: 6530-010
;   TELECOMMUNICATION INFORMATION:
;     TELEPHONE: (212) 790-9090
;     TELEFAX: (212) 869-9741/8864
;     TELEX: 66141 PENNIE
; INFORMATION FOR SEQ ID NO: 23:
;   SEQUENCE CHARACTERISTICS:
;     LENGTH: 160 amino acids
;     TYPE: amino acid
;     TOPOLOGY: linear
;   MOLECULE TYPE: peptide
;   HYPOTHETICAL: NO
;   ORIGINAL SOURCE:
;     ORGANISM: birch (Betula sp.)
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;    IMMEDIATE SOURCE:
;      LIBRARY:  POLLEN FROM ALLERGON AB, ENGELHOLM, SWEDEN
US-07-847-010-23


  Query Match             99.0%;  Score 810;  DB 1;  Length 160;
  Best Local Similarity   98.7%;  Pred. No. 4.9e-82;
  Matches  157;  Conservative    0;  Mismatches    2;  Indels    0;  Gaps    0;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
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Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
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Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
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; Sequence 3, Application US/07847010
; Patent No. 5693495
;  GENERAL INFORMATION:
;    APPLICANT:  Breiteneder, Heimo
;    APPLICANT:  Reikerstorfer, Arnold
;    APPLICANT:  Valenta, Rudolf
;    APPLICANT:  Hoffmann - Sommergruber, Karin
;    APPLICANT:  Breitenbach, Michael
;    APPLICANT:  Kraft, Dietrich
;    APPLICANT:  Rumpold, Helmut
;    APPLICANT:  Scheiner, Otto
;    APPLICANT:  Ebner, Christof
;    APPLICANT:  Ferreira, Fatima
;    TITLE OF INVENTION:  Allergens of Alder Pollen and
;    TITLE OF INVENTION:  Applications Thereof
;    NUMBER OF SEQUENCES:  23
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Pennie & Edmonds
;      STREET:  1155 Avenue of the Americas
;      CITY:  New York
;      STATE:  New York
;      COUNTRY:  U.S.A.
;      ZIP:  10036-2711
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/07/847,010
;      FILING DATE:  01-JUN-1992
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Jones III, Harry C
;      REGISTRATION NUMBER:  20,280
;      REFERENCE/DOCKET NUMBER:  6530-010
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (212) 790-9090
;      TELEFAX:  (212) 869-9741/8864
;      TELEX:  66141 PENNIE
;  INFORMATION FOR SEQ ID NO:  3:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  160 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  peptide
;    HYPOTHETICAL:  NO
;    ORIGINAL SOURCE:
;      ORGANISM:  Alder (Alnus sp.)
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US-07-847-010-3


  Query Match             82.9%;  Score 678;  DB 1;  Length 160;
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  Matches  128;  Conservative   12;  Mismatches   19;  Indels    0;  Gaps    0;

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Db      62 GSPFKYVKERVDEVDRVNFKYSFSVIEGGAVGDALEKVCNEIKIVAAPDGGSILKISNKF 121

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
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Db     122 HTKGDHEINAEQIKIEKEKAVGLLKAVESYLLAHSDAYN 160


RESULT   3
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; Patent No. 5693495
;  GENERAL INFORMATION:
;    APPLICANT:  Breiteneder, Heimo
;    APPLICANT:  Reikerstorfer, Arnold
;    APPLICANT:  Valenta, Rudolf
;    APPLICANT:  Hoffmann - Sommergruber, Karin
;    APPLICANT:  Breitenbach, Michael
;    APPLICANT:  Kraft, Dietrich
;    APPLICANT:  Rumpold, Helmut
;    APPLICANT:  Scheiner, Otto
;    APPLICANT:  Ebner, Christof
;    APPLICANT:  Ferreira, Fatima
;    TITLE OF INVENTION:  Allergens of Alder Pollen and
;    TITLE OF INVENTION:  Applications Thereof
;    NUMBER OF SEQUENCES:  23
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Pennie & Edmonds
;      STREET:  1155 Avenue of the Americas
;      CITY:  New York
;      STATE:  New York
;      COUNTRY:  U.S.A.
;      ZIP:  10036-2711
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/07/847,010
;      FILING DATE:  01-JUN-1992
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Jones III, Harry C
;      REGISTRATION NUMBER:  20,280
;      REFERENCE/DOCKET NUMBER:  6530-010
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (212) 790-9090
;      TELEFAX:  (212) 869-9741/8864
;      TELEX:  66141 PENNIE
;  INFORMATION FOR SEQ ID NO:  14:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  160 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  peptide
;    HYPOTHETICAL:  NO
;    ORIGINAL SOURCE:
;      ORGANISM:  hazel (Corylus sp.)
;    IMMEDIATE SOURCE:
;      LIBRARY:  POLLEN FROM ALLERGON AB, ENGELHOLM, SWEDEN
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US-07-847-010-14

Query Match 75.3%; Score 616; DB 1; Length 160;
Best Local Similarity 72.3%; Pred. No. 1.3e-60;
Matches 115; Conservative 22; Mismatches 22; Indels 0; Gaps 0;

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Db       2 GVFNYEVETPSVIPAARLFKSYVLDGDKLIPKVAPQAITSVENVEGNGGPGTIKNITFGE 61

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           |  :||||:||||||:|||||:|:|||| :|| |||: :|:|||| | ||||||||:|:
Db      62 GSRYKYVKERVDEVDNTNFKYSYTVIEGDVLGDKLEKVCSELKIVAAPGGGSILKISSKF 121

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           | |||||: ||::| :||| | ||||||:|||||| ||
Db     122 HAKGDHEINAEEMKGAKEMAEKLLRAVETYLLAHSAEYN 160
```

RESULT 4
US-07-847-010-17
; Sequence 17, Application US/07847010
; Patent No. 5693495
; GENERAL INFORMATION:
; APPLICANT: Breiteneder, Heimo
; APPLICANT: Reikerstorfer, Arnold
; APPLICANT: Valenta, Rudolf
; APPLICANT: Hoffmann - Sommergruber, Karin
; APPLICANT: Breitenbach, Michael
; APPLICANT: Kraft, Dietrich
; APPLICANT: Rumpold, Helmut
; APPLICANT: Scheiner, Otto
; APPLICANT: Ebner, Christof
; APPLICANT: Ferreira, Fatima
; TITLE OF INVENTION: Allergens of Alder Pollen and
; TITLE OF INVENTION: Applications Thereof
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Pennie & Edmonds
; STREET: 1155 Avenue of the Americas
; CITY: New York
; STATE: New York
; COUNTRY: U.S.A.
; ZIP: 10036-2711
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/07/847,010
; FILING DATE: 01-JUN-1992
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Jones III, Harry C
; REGISTRATION NUMBER: 20,280
; REFERENCE/DOCKET NUMBER: 6530-010
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (212) 790-9090
; TELEFAX: (212) 869-9741/8864
; TELEX: 66141 PENNIE
; INFORMATION FOR SEQ ID NO: 17:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 160 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: peptide
; HYPOTHETICAL: NO
; ORIGINAL SOURCE:
; ORGANISM: hazel (Corylus sp.)
; IMMEDIATE SOURCE:
; LIBRARY: POLLEN FROM ALLERGON AB, ENGELHOLM, SWEDEN

US-07-847-010-17

Query Match 75.3%; Score 616; DB 1; Length 160;
Best Local Similarity 72.3%; Pred. No. 1.3e-60;
Matches 115; Conservative 22; Mismatches 22; Indels 0; Gaps 0;

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Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
           |||||| ||||||||||||:::|||| | ||||||||:||||: ||||||||| |:| |
Db       2 GVFNYEAETTSVIPAARLFKSYVLDGDKLIPKVAPQAITSVENVEGNGGPGTIKNITFGE 61

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           |  :||||:||||||:||| |:|:|||| :|| |||: :|:|||| | ||||||||:|:
Db      62 GSRYKYVKERVDEVDNTNFTYSYTVIEGDVLGDKLEKVCHELKIVAAPGGGSILKISSKF 121

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
           | |||||: ||::| :||| | ||||||:|||||| ||
Db     122 HAKGDHEINAEEMKGAKEMAEKLLRAVETYLLAHSAEYN 160
```

RESULT 5
US-07-847-010-11
; Sequence 11, Application US/07847010
; Patent No. 5693495
; GENERAL INFORMATION:
; APPLICANT: Breiteneder, Heimo
; APPLICANT: Reikerstorfer, Arnold
; APPLICANT: Valenta, Rudolf
; APPLICANT: Hoffmann - Sommergruber, Karin
; APPLICANT: Breitenbach, Michael
; APPLICANT: Kraft, Dietrich
; APPLICANT: Rumpold, Helmut
; APPLICANT: Scheiner, Otto
; APPLICANT: Ebner, Christof
; APPLICANT: Ferreira, Fatima
; TITLE OF INVENTION: Allergens of Alder Pollen and
; TITLE OF INVENTION: Applications Thereof
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Pennie & Edmonds
; STREET: 1155 Avenue of the Americas
; CITY: New York
; STATE: New York
; COUNTRY: U.S.A.
; ZIP: 10036-2711
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/07/847,010
; FILING DATE: 01-JUN-1992
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Jones III, Harry C
; REGISTRATION NUMBER: 20,280
; REFERENCE/DOCKET NUMBER: 6530-010
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (212) 790-9090
; TELEFAX: (212) 869-9741/8864
; TELEX: 66141 PENNIE
; INFORMATION FOR SEQ ID NO: 11:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 160 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: peptide
; HYPOTHETICAL: NO
; ORIGINAL SOURCE:
; ORGANISM: hazel (Corylus sp.)
; IMMEDIATE SOURCE:
; LIBRARY: POLLEN FROM ALLERGON AB, ENGELHOLM, SWEDEN

US-07-847-010-11

Query Match 74.6%; Score 610; DB 1; Length 160;
Best Local Similarity 71.7%; Pred. No. 6e-60;
Matches 114; Conservative 22; Mismatches 23; Indels 0; Gaps 0;

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Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
Db       2 GVFNYEVETPSVIPAARLFKSYVLDGDKLIPKVAPQAITSVENVEGNGGPGTIKNITFGE 61

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
Db      62 GSRYKYVKERVDEVDNTNFTYSYTVIEGDVLGDKLEKVCHELKIVAAPGGGSILKISSKF 121

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
Db     122 HAKGDHEINAEEMKGAKEMAEKLLRAVETYLLAHSAEYN 160
```

RESULT 6
US-07-847-010-20
; Sequence 20, Application US/07847010
; Patent No. 5693495
; GENERAL INFORMATION:
; APPLICANT: Breiteneder, Heimo
; APPLICANT: Reikerstorfer, Arnold
; APPLICANT: Valenta, Rudolf
; APPLICANT: Hoffmann - Sommergruber, Karin
; APPLICANT: Breitenbach, Michael
; APPLICANT: Kraft, Dietrich
; APPLICANT: Rumpold, Helmut
; APPLICANT: Scheiner, Otto
; APPLICANT: Ebner, Christof
; APPLICANT: Ferreira, Fatima
; TITLE OF INVENTION: Allergens of Alder Pollen and
; TITLE OF INVENTION: Applications Thereof
; NUMBER OF SEQUENCES: 23
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Pennie & Edmonds
; STREET: 1155 Avenue of the Americas
; CITY: New York
; STATE: New York
; COUNTRY: U.S.A.
; ZIP: 10036-2711
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/07/847,010
; FILING DATE: 01-JUN-1992
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Jones III, Harry C
; REGISTRATION NUMBER: 20,280
; REFERENCE/DOCKET NUMBER: 6530-010
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (212) 790-9090
; TELEFAX: (212) 869-9741/8864
; TELEX: 66141 PENNIE
; INFORMATION FOR SEQ ID NO: 20:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 160 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: peptide
; HYPOTHETICAL: NO
; ORIGINAL SOURCE:
; ORGANISM: hazel (Corylus sp.)
; IMMEDIATE SOURCE:
; LIBRARY: POLLEN FROM ALLERGON AB, ENGELHOLM, SWEDEN

US-07-847-010-20

Query Match 73.7%; Score 603; DB 1; Length 160;
Best Local Similarity 71.1%; Pred. No. 3.6e-59;
Matches 113; Conservative 22; Mismatches 24; Indels 0; Gaps 0;

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Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
Db       2 GVFNYEVETPSVISAARLFKSYVLDGDKLIPKVAPQAITSVENVGGNGGPGTIKNITFGE 61

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
Db      62 GSRYKYVKERVDEVDNTNFKYSYTVIEGDVLGDKLEKVCSELKIVAAPGGGSTLKISSKF 121

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
Db     122 HAKGDHEINAEEMKGAKEMAEKLLRAVETYLLAHSAEYN 160
```

RESULT 7
5312912-2
;Patent No. 5312912
; APPLICANT: HADWIGER, LEE A.;CHIANG, CHIN C.;HOROVITZ,
;DANIEL A.
; TITLE OF INVENTION: PROCEDURES AND REGULATORY DNA SEQUENCES
;FOR GENETICALLY ENGINEERING DISEASE RESISTANCE AND OTHER
;INDUCIBLE TRAITS IN PLANTS
; NUMBER OF SEQUENCES: 9
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/07/393,301
; FILING DATE: 13-JUN-1989
;SEQ ID NO:2:
; LENGTH: 158
5312912-2

Query Match 45.5%; Score 372; DB 5; Length 158;
Best Local Similarity 49.7%; Pred. No. 1.1e-33;
Matches 79; Conservative 26; Mismatches 52; Indels 2; Gaps 2;

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Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
Db       2 GVFNFEEEATSIVAPATLHKALVTDADILTPKVI-DAIKSIEIVEGNGGPGTIKKLTFVE 60

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
Db      61 DGETKYVLHKVELVDDANWANNYSIVGGVGLPDTVEKISFEAKLSAGPNGGSIAKLSVKY 120

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAYN 159
Db     121 YTKGDAIPSEEEIKNGKAKGEGIFKALEGYCVANPD-YN 158
```

RESULT 8
US-08-363-010-1
; Sequence 1, Application US/08363010
; Patent No. 5512484
; GENERAL INFORMATION:
; APPLICANT: Yamamoto, Mika
; APPLICANT: Oheda, Kenji
; TITLE OF INVENTION: CARROT 16 KD PROTEIN, GENE CODING FOR
; TITLE OF INVENTION: SAID PROTEIN AND PLASMID CONTAINING SAID GENE
; NUMBER OF SEQUENCES: 6
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Birch, Stewart, Kolasch & Birch, LLP
; STREET: 8110 Gatehouse Road, Suite 500 East
; CITY: Falls Church
; STATE: Virginia
; COUNTRY: U.S.A.
; ZIP: 22042
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk

```
;       COMPUTER:  IBM PC compatible
;       OPERATING SYSTEM:  PC-DOS/MS-DOS
;       SOFTWARE:  PatentIn Release #1.0, Version #1.30
;     CURRENT APPLICATION DATA:
;       APPLICATION NUMBER:  US/08/363,010
;       FILING DATE:  23-DEC-1994
;       CLASSIFICATION:  435
;     ATTORNEY/AGENT INFORMATION:
;       NAME:  Svensson, Leonard R.
;       REGISTRATION NUMBER:  30,330
;       REFERENCE/DOCKET NUMBER:  20-3628P
;     TELECOMMUNICATION INFORMATION:
;       TELEPHONE:  (703) 205-8000
;       TELEFAX:  (703) 205-8050
;       TELEX:  248345
;   INFORMATION FOR SEQ ID NO:  1:
;     SEQUENCE CHARACTERISTICS:
;       LENGTH:  154 amino acids
;       TYPE:  amino acid
;       STRANDEDNESS:  single
;       TOPOLOGY:  linear
;     MOLECULE TYPE:  protein
;     HYPOTHETICAL:  NO
;     ANTI-SENSE:  NO
;     ORIGINAL SOURCE:
;       ORGANISM:  Daucus carota
;       STRAIN:  Kuroda Gosun
US-08-363-010-1


  Query Match             33.8%;  Score 276.5;  DB 1;  Length 154;
  Best Local Similarity   37.0%;  Pred. No. 3.9e-23;
  Matches   57;  Conservative   32;  Mismatches   64;  Indels    1;  Gaps    1;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
           |  ::  | || : | ::|   :|| | : || || |  ||: : |:|| ||:: |: ||
Db       2 GAQSHSLEITSSVSAEKIFSGIVLDVDTVIPKAAPGAYKSVD-VKGDGGAGTVRIITLPE 60

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | |   :  | | |:     |: :||:|  : : :| |   : :| | ||||| | :  :
Db      61 GSPITSMTVRTDAVNKEALTYDSTVIDGDILLEFIESIETHMVVVPTADGGSITKTTAIF 120

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAH 154
           |||||  |  | :| :      | :|:|:||:|:
Db     121 HTKGDAVVPEENIKFADAQNTALFKAIEAYLIAN 154


RESULT  9
US-08-911-434A-4
; Sequence 4, Application US/08911434A
; Patent No. 5959176
;  GENERAL INFORMATION:
;    APPLICANT:  TORIKAI, Satomi
;    APPLICANT:  OEDA, Kenji
;    TITLE OF INVENTION:  PLANT PROMOTER AND UTILIZATION THEREOF
;    NUMBER OF SEQUENCES:  14
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  BIRCH, STEWART, KOLASCH & BIRCH, LLP
;      STREET:  P.O. BOX 747
;      CITY:  FALLS CHURCH
;      STATE:  VIRGINIA
;      COUNTRY:  UNITED STATES OF AMERICA
;      ZIP:  22040
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.30
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/911,434A
;      FILING DATE:  12-AUG-1997
;      CLASSIFICATION:  800
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Stewart, Raymond C.
;      REGISTRATION NUMBER:  21,066
;      REFERENCE/DOCKET NUMBER:  2185-0199P
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (703)205-8000
;      TELEFAX:  (703)205-8050
;  INFORMATION FOR SEQ ID NO:  4:
;    SEQUENCE CHARACTERISTICS:
;     LENGTH: 154 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
US-08-911-434A-4


  Query Match             33.6%;  Score 274.5;  DB 2;  Length 154;
  Best Local Similarity   37.0%;  Pred. No. 6.4e-23;
  Matches   57;  Conservative   31;  Mismatches   65;  Indels    1;  Gaps    1;

Qy       1 GVFNYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE 60
           |  ::  | || : | ::|   :|| | : || || |  ||: : |:|| ||:: |: ||
Db       2 GAQSHSLEITSSVSAEKIFSGIVLDVDTVIPKAAPGAYKSVD-VKGDGGAGTVRIITLPE 60

Qy      61 GLPFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKY 120
           | |   :  | | |:     |: :||:|  :   :| |   : :| | ||||| | :  :
Db      61 GSPITSMTVRTDAVNKEALTYDSTVIDGDILLGFIESIETHLVVVPTADGGSITKTTAIF 120

Qy     121 HTKGDHEVKAEQVKASKEMGETLLRAVESYLLAH 154
           |||||  |  | :| :      | :|:|:||:|:
Db     121 HTKGDAVVPEENIKFADAQNTALFKAIEAYLIAN 154


RESULT  10
US-08-199-219-6
; Sequence 6, Application US/08199219
; Patent No. 6031151
; Patent No. 6031151 5698768
;  GENERAL INFORMATION:
;    APPLICANT:  DRAPER, JOHN
;    TITLE OF INVENTION:  CALLUS-SPECIFIC PROMOTERS
;    NUMBER OF SEQUENCES:  8
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  HALE AND DORR
;      STREET:  1455 PENNSYLVANIA AVENUE, N.W.
;      CITY:  WASHINGTON
;      STATE:  D.C.
;      ZIP:  20004
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25 (EPO)
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/199,219
;      FILING DATE:  01 MARCH 1994
;    PRIOR APPLICATION DATA:
;    PRIOR APPLICATION DATA:  APPLICATION NUMBER:  PCT/GB92/01602
;    PRIOR APPLICATION DATA:  FILING DATE:  02 SEPTEMBER 1992
;  INFORMATION FOR SEQ ID NO:  6:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  158 amino acids
;      TYPE:  amino acid
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
US-08-199-219-6


  Query Match             29.3%;  Score 240;  DB 3;  Length 158;
  Best Local Similarity   36.5%;  Pred. No. 4.3e-19;
  Matches   57;  Conservative   30;  Mismatches   65;  Indels    4;  Gaps    3;

Qy       4 NYETETTSVIPAARLFKAFILDGDNLFPKVAPQAISSVENISGNGGPGTIKKISFPE-GL 62
           ::  |    : | |:||| :||  || ||: |  |:    :||:|  |||::|      :
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Db      5 SWSHEVAVNVAAGRMFKAAMLDWHNLGPKIVPDFIAGGSVVSGDGSVGTIREIKINNPAI 64

Qy     63 PFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGGSILKISNKYHT 122
          || |||:|:| |||  |:   :::||| :|   |  :   |   : :|| ::|::  |
Db     65 PFSYVKERLDFVDHDKFEVKQTLVEGGGLGKMFECATTHFKFEPSSNGGCLVKVTASY-- 122

Qy    123 KGDHEVKAEQVKASKEMGETLLRAVESYLLAHSDAY 158
          |    |  |  || ||     ::| |:|||:  ||
Db    123 KILPGVADESAKA-KEGITNHMKATEAYLLANPTAY 157


RESULT  11
US-08-357-533A-8
; Sequence 8, Application US/08357533A
; Patent No. 5831050
;  GENERAL INFORMATION:
;    APPLICANT:  JIN, DONALD F
;    APPLICANT:  OPPERMANN, HERMANN
;    APPLICANT:  KUBERASAMPATH, THANGAVEL
;    APPLICANT:  SMART, JOHN E
;    TITLE OF INVENTION:  NOVEL MORPHOGEN CELL SURFACE RECEPTOR
;    NUMBER OF SEQUENCES:  12
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  PATENT ADMINISTRATOR, CREATIVE BIOMOLECULES,
;      ADDRESSEE:  INC
;      STREET:  45 SOUTH STREET
;      CITY:  HOPKINTON
;      STATE:  MA
;      COUNTRY:  USA
;      ZIP:  01748
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/357,533A
;      FILING DATE:  16-DEC-1994
;      CLASSIFICATION:  435
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  KELLY, ROBIN D
;      REGISTRATION NUMBER:  34,637
;      REFERENCE/DOCKET NUMBER:  CRP-073FW
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (508)-435-9001
;      TELEFAX:  (508)-435-0992
;  INFORMATION FOR SEQ ID NO:  8:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  669 amino acids
;      TYPE:  amino acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
;    FEATURE:
;      NAME/KEY:  Protein
;      LOCATION:  1..669
;      OTHER INFORMATION:  /note= "C ELEGANS RECEPTOR KINASE"
US-08-357-533A-8


  Query Match             9.7%;  Score 79;  DB 2;  Length 669;
  Best Local Similarity   24.5%;  Pred. No. 2.2;
  Matches   39;  Conservative   25;  Mismatches   53;  Indels   42;  Gaps    9;

Qy      8 ETTSVIPAARLFKAFILDGD---NLFPKVAP--QAISSVENISGNGGPGTIKKISFPEGL 62
          || : :|   :       ||   :  |:|||  |  |::   :||         ||| |:
Db    216 ETENNVPMVTM-------GDGAGSSVPEVAPIEQQGSTMSTSAGN---------SFPPGI 259

Qy     63 PFKYVKDRVDEVDHTNFKYNYSVIEGGPIG-DTLEK--ISNEIKIVATPDGGSILKISNK 119
             :|| :| :: |:         |  :|  || |  |  :|::      |    :|
Db    260 MPNNMKDMLDVLEETS---------GSGMGPTTLHKLTIGGQIRLTGRVGSGRFGNVS-- 308

Qy    120 YHTKGDHEVKAEQVKASKEMGETLL----RAVESYLLAH 154
```

```
            :||:  :|  ||    : |          |: :| |
Db    309 ---RGDYRGEAVAVKVFNALDEPAFHKETEIFETRMLRH 344


RESULT  12
US-08-459-009-8
; Sequence 8, Application US/08459009
; Patent No. 5861479
;  GENERAL INFORMATION:
;    APPLICANT:  JIN, DONALD F
;    APPLICANT:  OPPERMANN, HERMANN
;    APPLICANT:  KUBERASAMPATH, THANGAVEL
;    APPLICANT:  SMART, JOHN E
;    TITLE OF INVENTION:  NOVEL MORPHOGEN CELL SURFACE RECEPTOR
;    NUMBER OF SEQUENCES:  12
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  PATENT ADMINISTRATOR, CREATIVE BIOMOLECULES,
;      ADDRESSEE:  INC
;      STREET:  45 SOUTH STREET
;      CITY:  HOPKINTON
;      STATE:  MA
;      COUNTRY:  USA
;      ZIP:  01748
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/459,009
;      FILING DATE:
;      CLASSIFICATION:  435
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US 08/357,533
;      FILING DATE:  16-DEC-1994
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  KELLY, ROBIN D
;      REGISTRATION NUMBER:  34,637
;      REFERENCE/DOCKET NUMBER:  CRP-073FW
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (508)-435-9001
;      TELEFAX:  (508)-435-0992
;  INFORMATION FOR SEQ ID NO:  8:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  669 amino acids
;      TYPE:  amino acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
;    FEATURE:
;      NAME/KEY:  Protein
;      LOCATION:  1..669
;      OTHER INFORMATION:  /note= "C ELEGANS RECEPTOR KINASE"
US-08-459-009-8


  Query Match             9.7%;  Score 79;  DB 2;  Length 669;
  Best Local Similarity   24.5%;  Pred. No. 2.2;
  Matches   39;  Conservative   25;  Mismatches   53;  Indels   42;  Gaps    9;

Qy      8 ETTSVIPAARLFKAFILDGD---NLFPKVAP--QAISSVENISGNGGPGTIKKISFPEGL 62
          || : :|   :       ||   :  |:|||  |  |::   :||         ||| |:
Db    216 ETENNVPMVTM-------GDGAGSSVPEVAPIEQQGSTMSTSAGN---------SFPPGI 259

Qy     63 PFKYVKDRVDEVDHTNFKYNYSVIEGGPIG-DTLEK--ISNEIKIVATPDGGSILKISNK 119
             :|| :| :: |:         |  :|  || |  |  :|::      |    :|
Db    260 MPNNMKDMLDVLEETS---------GSGMGPTTLHKLTIGGQIRLTGRVGSGRFGNVS-- 308

Qy    120 YHTKGDHEVKAEQVKASKEMGETLL----RAVESYLLAH 154
            :||:  :|  ||    : |          |: :| |
Db    309 ---RGDYRGEAVAVKVFNALDEPAFHKETEIFETRMLRH 344
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```
RESULT  13
US-08-459-951-8
; Sequence 8, Application US/08459951
; Patent No. 6093547
;  GENERAL INFORMATION:
;    APPLICANT:  JIN, DONALD F
;    APPLICANT:  OPPERMANN, HERMANN
;    APPLICANT:  KUBERASAMPATH, THANGAVEL
;    APPLICANT:  SMART, JOHN E
;    TITLE OF INVENTION:  NOVEL MORPHOGEN CELL SURFACE RECEPTOR
;    NUMBER OF SEQUENCES:  12
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  PATENT ADMINISTRATOR, CREATIVE BIOMOLECULES,
;      ADDRESSEE:  INC
;      STREET:  45 SOUTH STREET
;      CITY:  HOPKINTON
;      STATE:  MA
;      COUNTRY:  USA
;      ZIP:  01748
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/459,951
;      FILING DATE:
;      CLASSIFICATION:  435
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US 08/357,533
;      FILING DATE:  16-DEC-1994
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  KELLY, ROBIN D
;      REGISTRATION NUMBER:  34,637
;      REFERENCE/DOCKET NUMBER:  CRP-073FW
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (508)-435-9001
;      TELEFAX:  (508)-435-0992
;  INFORMATION FOR SEQ ID NO:  8:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  669 amino acids
;      TYPE:  amino acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  protein
;    FEATURE:
;      NAME/KEY:  Protein
;      LOCATION:  1..669
;      OTHER INFORMATION:  /note= "C ELEGANS RECEPTOR KINASE"
US-08-459-951-8


  Query Match             9.7%;  Score 79;  DB 3;  Length 669;
  Best Local Similarity   24.5%;  Pred. No. 2.2;
  Matches   39;  Conservative   25;  Mismatches   53;  Indels   42;  Gaps    9;

Qy       8 ETTSVIPAARLFKAFILDGD---NLFPKVAP--QAISSVENISGNGGPGTIKKISFPEGL 62
           || : :|   :       ||   :  |:|||  |  |::   :||         ||| |:
Db     216 ETENNVPMVTM-------GDGAGSSVPEVAPIEQQGSTMSTSAGN---------SFPPGI 259

Qy      63 PFKYVKDRVDEVDHTNFKYNYSVIEGGPIG-DTLEK--ISNEIKIVATPDGGSILKISNK 119
             :|| :| :: |:         |  :|  || |  |  :|::      |    :|
Db     260 MPNNMKDMLDLVLEETS---------GSGMGPTTLHKLTIGGQIRLTGRVGSGRFGNVS-- 308

Qy     120 YHTKGDHEVKAEQVKASKEMGETLL----RAVESYLLAH 154
             :||:  :|  ||    : |       |: :| |
Db     309 ---RGDYRGEAVAVKVFNALDEPAFHKETEIFETRMLRH 344


RESULT  14
US-08-316-650-12
; Sequence 12, Application US/08316650
; Patent No. 5942496
;  GENERAL INFORMATION:
;    APPLICANT:  Bonadio, Jeffrey
;    APPLICANT:  Roessler, Blake J.
;    APPLICANT:  Goldstein, Steven A.
;    APPLICANT:  Lin, Wushan
;    TITLE OF INVENTION:  METHODS AND COMPOSITIONS
;    TITLE OF INVENTION:  FOR STIMULATING BONE CELLS
;    NUMBER OF SEQUENCES:  15
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Arnold, White & Durkee
;      STREET:  P.O. Box 4433
;      CITY:  Houston
;      STATE:  Texas
;      COUNTRY:  USA
;      ZIP:  77210
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS
;      SOFTWARE:  PatentIn Release #1.0, Version #1.25
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  US/08/316,650
;      FILING DATE:  30-SEP-1994
;      CLASSIFICATION:  514
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US 08/199,780
;      FILING DATE:  30-SEP-1994
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Parker, David L.
;      REGISTRATION NUMBER:  32,165
;      REFERENCE/DOCKET NUMBER:  UMIC:008
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (512) 418-3000
;      TELEFAX:  (713) 789-2679
;      TELEX:  79-0924
;  INFORMATION FOR SEQ ID NO:  12:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  1442 amino acids
;      TYPE:  amino acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  peptide
US-08-316-650-12


  Query Match             9.5%;  Score 78;  DB 2;  Length 1442;
  Best Local Similarity   24.1%;  Pred. No. 8.8;
  Matches   38;  Conservative   18;  Mismatches   52;  Indels   50;  Gaps    7;

Qy      25 DGDNLFP----------------KVAPQAISSVENISGNGGPGTIKKISFPEGL------ 62
           || |  |                | |        |  |||    :|   ||
Db    1130 DGSNGIPGPIGPPGPRGRSGETGPVGPPGSPGPPGPPGPPGPPGPGI--DMSAFAGLGQREKG 1187

Qy      63 --PFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGG--------S 112
             | :|:  | || | |  :::  |        ||: ::|:|: : :|||
Db    1188 PDPMQYM--RADEADSTLRQHDVEV------DATLKSLNNQIESIRSPDGSRKNPARTCQ 1239

Qy     113 ILKISNKYHTKGDHEVKAEQ--------VKASKEMGET 142
             ||: :     ||: :   |         |  : | |||
Db    1240 DLKLCHPEWKSGDYWIDPNQGCTLDAMKVFCNMETGET 1277


RESULT  15
PCT-US95-02251-12
; Sequence 12, Application PC/TUS9502251
;  GENERAL INFORMATION:
;    APPLICANT:
;    TITLE OF INVENTION:  METHODS AND COMPOSITIONS FOR STIMULATING BONE
;    TITLE OF INVENTION:  CELLS
;    NUMBER OF SEQUENCES:  18
;    CORRESPONDENCE ADDRESS:
;      ADDRESSEE:  Arnold, White & Durkee
;      STREET:  P.O. Box 4433
```

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;      CITY:  Houston
;      STATE:  Texas
;      COUNTRY:  United States of America
;      ZIP:  77210
;    COMPUTER READABLE FORM:
;      MEDIUM TYPE:  Floppy disk
;      COMPUTER:  IBM PC compatible
;      OPERATING SYSTEM:  PC-DOS/MS-DOS/ASCII
;      SOFTWARE:  PatentIn Release #1.0, Version
;      SOFTWARE:  #1.30
;    CURRENT APPLICATION DATA:
;      APPLICATION NUMBER:  PCT/US95/02251
;      FILING DATE:  CONCURRENTLY HEREWITH
;      CLASSIFICATION:
;    PRIOR APPLICATION DATA:
;      APPLICATION NUMBER:  US 08/316,650
;      FILING DATE:  30-SEP-1994
;      CLASSIFICATION:
;      APPLICATION NUMBER:  US 08/199,780
;      FILING DATE:  18-FEB-1994
;      CLASSIFICATION:
;    ATTORNEY/AGENT INFORMATION:
;      NAME:  Parker, David L.
;      REGISTRATION NUMBER:  32,165
;      REFERENCE/DOCKET NUMBER:  UMIC009P--
;    TELECOMMUNICATION INFORMATION:
;      TELEPHONE:  (512) 418-3000
;      TELEFAX:  (713) 789-2679
;      TELEX:  79-0924
;  INFORMATION FOR SEQ ID NO:  12:
;    SEQUENCE CHARACTERISTICS:
;      LENGTH:  1442 amino acids
;      TYPE:  amino acid
;      STRANDEDNESS:  single
;      TOPOLOGY:  linear
;    MOLECULE TYPE:  peptide
PCT-US95-02251-12


  Query Match             9.5%;  Score 78;  DB 4;  Length 1442;
  Best Local Similarity   24.1%;  Pred. No. 8.8;
  Matches   38;  Conservative   18;  Mismatches   52;  Indels   50;  Gaps    7;

Qy      25 DGDNLFP----------------KVAPQAISSVENISGNGGPGTIKKISFPEGL------ 62
           || |  |                 | |          |  |||    :|   ||
Db    1130 DGSNGIPGPIGPPGPRGRSGETGPVGPPGSPGPPGPPGPPGPGI--DMSAFAGLGQREKG 1187

Qy      63 --PFKYVKDRVDEVDHTNFKYNYSVIEGGPIGDTLEKISNEIKIVATPDGG--------S 112
             | :|:  | || | |  :::  |        ||: ::|:|: : :|||
Db    1188 PDPMQYM--RADEADSTLRQHDVEV------DATLKSLNNQIESIRSPDGSRKNPARTCQ 1239

Qy     113 ILKISNKYHTKGDHEVKAEQ--------VKASKEMGET 142
            ||: :    ||: :   |         |  : | |||
Db    1240 DLKLCHPEWKSGDYWIDPNQGCTLDAMKVFCNMETGET 1277


Search completed: December 11, 2000, 10:41:41
Job time: 198 sec
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